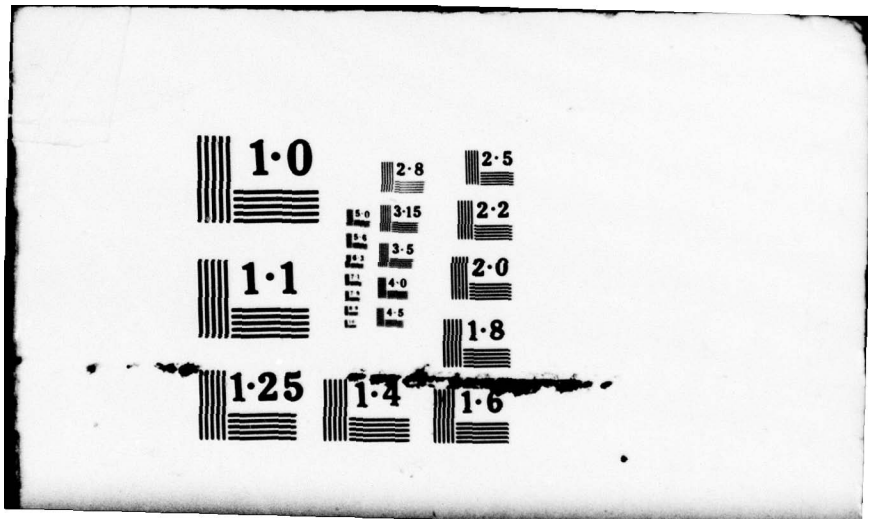
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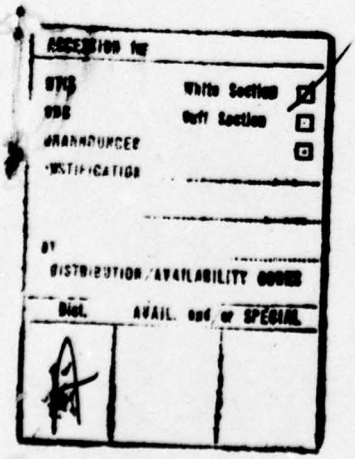
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*Oceanography	Ocean Waves	Marine Meterology
Marine Geology	Sea Water	Computer Programs
Marine Biology	Sea Ice	Hydrodynamics
Tides	Ocean Bottom	Acoustics

20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

This bibliography contains unclassified-unlimited citations on *Oceanography*. These citations of reports present information on marine life, ocean waves, tides, currents, properties of sea water and ice, ocean-bottom topography, and composition. The four computer-generated indexes provided are Corporate Author-Monitoring Agency, Subject, Title and Personal Author.

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This bibliography contains 756 unclassified-unlimited citations on *Oceanography*.

These citations are studies and analyses pertaining to marine life, ocean waves, tides, currents, properties of sea water and ice, ocean-bottom topography and composition.

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This report supersedes DDC report bibliography on *Oceanography*, AD-766 200, DDC-TAS-73-55, dated August 1973.

Individual entries are arranged in AD number sequence under the heading bibliographic references. Computer-generated indexes of Corporate Author-Monitoring Agency, Subject, Title and Personal Author are provided.

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AD-A058 265 8/12
WASHINGTON UNIV SEATTLE APPLIED PHYSICS LAB

Comprehensive Studies of Arctic Pack Ice in April 1976. (U)

DESCRIPTIVE NOTE: Data presentation and analysis rept., MAY 78 93P Garrison,G. R. ;Francois, R. E. ;Early,E. W. ;Wen,T. ;
REPT. NO. APL-UW 7724
CONTRACT: N000123-74-C-2064, N000123-77-C-1013
PROJ: F52555
TASK: ZF52555001

UNCLASSIFIED REPORT

DESCRIPTORS: *Pack ice, *Chukchi Sea, Spring season, Morphology, Sea ice, Reverberation, Remote detectors, Underice, Submarine detection, Acoustic tracking (U)
IDENTIFIERS: WUMR01C2, PE62759N (U)

During the occupancy of a camp on an ice floe in the Chukchi Sea, studies were made of both the upper and lower surfaces of the pack ice surrounding the camp. Hole drilling and surface observations provided accurate information on ice thickness and composition. A submarine was tracked acoustically as it profiled the underside of the ice. Two aircraft examined the upper surface using photography, infrared imagery, laser profiling and microwave imagery. The highly detailed under-ice profiles show the underside of the ice to be very irregular with little erosion regardless of the age of the ice. The upper surface erodes much faster, and thus gives little evidence of the roughness below. Radiation patterns reveal thickness and age characteristics of the floe but their interpretation requires further investigation. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A058 203 8/10 17/7 9/2
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Digitized Navigation, Depth and Magnetic Data from Scripps Cruises Processed Through 1977. (U)

DESCRIPTIVE NOTE: Reference rept., JUN 78 37P Smith,S. M. ;Albright,U. G. ;Psaropulos,V. W. ;Papadopoulos,G. ; Hydock,L. ;
REPT. NO. SIO-REF-78-15
CONTRACT: N00014-75-C-0152

UNCLASSIFIED REPORT
Availability: Document partially illegible.

DESCRIPTORS: *Oceanographic data, Navigation, Digital systems, Marine geology, Data acquisition, Data processing, Data bases, Plotting, Depth, Geomagnetism (U)

The SIO Geological Data Center coordinates underway data collection; processes the digital navigation, depth and magnetics; and produces cruises reports and computer generated plots for archiving and distribution. The data center also archives, microfilms, and indexes seismic profiler (airgun), echosounder and magnetometer records. (Gravity data are archived and processed separately.) Between 1976 when the last general index report was issued and December 1977, the cutoff data for this report, 33 legs of current Scripps cruises and 13 legs of Glomar Challenger (Deepsea Drilling Project) have been processed by the data center. Navigation, but no depth and magnetics, has also been processed for the early legs 4 through 12 of the Challenger. (Navigation = 193,734 miles; magnetics = 131,515 miles, and depth = 131,862 miles.) (U)

AD-A057 955 8/10 5/1
ARINC RESEARCH CORP ANNAPOLIS MD

Summary Listing of System Effectiveness Tasks, (U)

MAY 78 37P McNamara,Michael ;
REPT. NO. 1616-36-12-1747
CONTRACT: N00123-73-C-1698

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Systems management, Reliability, Technology forecasting, Undersea warfare, Naval research, Underwater acoustics, Quality assurance, Systems engineering (U)
IDENTIFIERS: MOSS(Mobile Submarine Simulator), Mobile submarine simulator, MNV(Mine Neutralization Vehicle), Mine neutralization vehicle (U)

System effectiveness tasks on Ocean Technology projects provided the Naval Ocean Systems Center by ARINC Research Corporation under contract N00123-73-C-1698 are summarized. Tasks areas, and delivered items are briefly identified for 33 tasks conducted during the period 23 May 1973 through 31 January 1978. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A057 595 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF
GEOLOGICAL RESEARCH DIV

Currents and Sedimentary Processes in Submarine Canyons off the Northeast United States, (U)

78 20P Keller,George H. ;Shepard, Francis P. ;
CONTRACT: N00014-69-A-0200, NSF-DES74-22089

UNCLASSIFIED REPORT
Availability: Pub. in Sedimentation in Submarine Canyons, Fans, and Trenches, Ch2, p15-32 1978.

DESCRIPTORS: *Submarine canyons, *Sedimentation, *Ocean currents, North Atlantic Ocean, Measurement, Instrumentation, Reprints (U)

Reprint: Currents and Sedimentary Processes in Submarine Canyons off the Northeast United States.

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A057 420 8/3 17/9 21/5 14/2
17/5
NAVAL RESEARCH LAB WASHINGTON D C

Gulf Stream Ground Truth Project: Results of NRL Airborne Sensors. (U)

DESCRIPTIVE NOTE: Final rept.,
JUN 78 111P McClain,C. R. ;Chen,D. T. ;Hammond,D. L. ;
REPT. NO. NRL-MR-3779
PROJ: F52-553
TASK: WF52553000

UNCLASSIFIED REPORT

DESCRIPTORS: *Gulf stream, *Remote detectors, *Ocean waves, Ocean surface, Surface truth, Height, Radar equipment, Airborne, Flight paths, Wind velocity, Ocean currents, Profilometers, Lasers, Altimeters, Sea water, Surface temperature, Thermometers, Infrared detectors, Sea states, Oceanographic data, Spectrum analysis, Algorithms (U)
IDENTIFIERS: Wind waves, Spectral aliasing, Angular spreading, LPN-NRL-G01-10, PE62759N (U)

Results of ocean surface measurements by NRL active and passive sensors are summarized. The data set was collected during three flights over the Gulf Stream in the spring of 1976 and coincided with in situ measurements taken from an oceanographic research vessel. The sensors were the NRL high flight radar, NRL wind-wave radar, a laser profilometer and a precision radiation thermometer. The quantities derived include sea state, ocean wave frequency spectra, surface wind speed and sea surface temperature. The remote determinations are found to agree very well with other data sources. In addition, experimental and theoretical results regarding the effects of ocean wave angular spreading on airborne profilometer determinations of wave frequency spectra are included as well as a detailed description of the data analysis algorithm. The spectral distortion is not severe for track angles within 15 degrees of the wind vector.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A057 372 8/3
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION SEATTLE WA PACIFIC MARINE ENVIRONMENTAL LABS

Oceanic Internal Waves from Ship, Aircraft, and Spacecraft: A Report on the New York-to-Bermuda Remote Sensing Experiment. (U)

MAY 78 151P Proni,John R. ;Apel,John R. ;Byrne ,H. Michael ;Sellers,Ronald L. ;
Newman,Fred C. ;
CONTRACT: DARPA-Order-2637

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean waves, *Internal waves, Remote detectors, Aerial photography, Oceanographic data, Oceanographic equipment, Visible spectra, Near infrared radiation, Infrared scanning, Meteorological radar, Coherent radar, Thermistors, Gulf stream, Oceanographic ships, Scientific satellites (U)
IDENTIFIERS: Landsat satellites (U)

The Ocean Remote Sensing Laboratory (ORSL) has been studying internal waves using remote sensing techniques employing three different types of observational platforms: ships, aircraft, and spacecraft. Internal waves and their manifestations have been observed using the following techniques: Satellite multispectral scanning imagers (principally in the visible and near-infrared); Radar--both coherent imaging radar and standard meteorological radar (all from aircraft); Hand-held visible photography (from spacecraft, aircraft, and ship; Ship-towed thermistors; and STD and XBT casts. (U)

AD-A057 333 8/3 17/1
ORI INC SILVER SPRING MD

Model Results of the Effects of Internal Waves on Acoustic Propagation. (U)

DESCRIPTIVE NOTE: Final rept., AUG 78 94P Moses,E. ;Galati,W. ; Nicholas,W. ;
REPT. NO. ORI-TR-1295
CONTRACT: N00014-76-C-0479
PROJ: R0145
TASK: R0145

UNCLASSIFIED REPORT

DESCRIPTORS: *Internal waves, *Sonar signals, *Ocean currents, Wave propagation, Acoustic scattering, Transmission loss, Passive sonar, Ray tracing, Acoustic waves, Bermuda, Superlow frequency, Time series analysis, Model tests (U)
IDENTIFIERS: WUNR274253 (U)

A model has been developed which simulates time variations in Acoustic transmission induced by internal wave activity in the ocean. The model produces explicit sample time series of acoustic transmission parameters. An explicit objective of the work was to provide a mechanism for investigating how such fluctuations affect low frequency sonar performance. The model parameterizes the internal wave field according to a power spectrum proposed by Garrett and Munk, and unperturbed acoustic transmission through use of ray trace techniques. The interaction between the two considers the effect on the phase of individual ray paths, and consequent fluctuations in the multipath sum. Both the ray trace characteristics and some parameters of the internal wave field depend on environmental conditions, so that the model can investigate sensitivity of results to geographic location and season. Sample model results show a strong increase in fluctuation rates with increasing acoustic frequency, a fluctuation magnitude (one standard deviation) of 5 to 6 dB except, perhaps, at short range, and no strong dependence on geographic location. One direct comparison of model results with experimental fluctuation data was made, and the results are considered very satisfactory. (Author) (U)

AD-A057 133 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

The HEBBLE Report being the Proceedings of the Workshop on a High Energy Benthic Boundary Layer Experiment Held at the Keystone Center for Continuing Education, Keystone, Colorado, March 13-17, 1978. (U)

DESCRIPTIVE NOTE: Technical rept., JUL 78 86P McCave,I. N. ;Hollister, C. D. ;Pyle,T. E. ;
REPT. NO. WHOI-78-48
CONTRACT: N00014-74-C-0262

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, Benthonic zone, Boundary layer, High energy, Ocean bottom sampling, Marine biology, Oceanographic equipment, Ocean currents, Site selection, Deep oceans, Workshops (U)
IDENTIFIERS: WUNR083004 (U)

A workshop was held on March 13-17, 1978 on a High Energy Benthic Boundary Layer Experiment. The meeting followed recognition of the importance of high speed currents at the deep ocean bed in eroding, transporting and depositing sediments and in producing bedforms. The importance of the turbulence and turbulent mixing processes in these regions was also emphasized. The workshop proposed an experiment with three main phases, detailed survey and site selection short (3-day), and long (6-month) experimental deployment of instrument packages designed to recover current, turbulence, optical, acoustic and photographic data. The site survey phase would involve not only hydrographic, echosounding and deep-tow survey but also recovery of undisturbed bottom samples and investigation of their properties in laboratory flumes. The short experiments would run at a high rate of data acquisition and get data on short term fluctuations of the floor and bed. The long experiments would have slower rates of data acquisition and employ in-situ processing and compaction of information from sensors. A cyclosonde profiling the lowermost 300 m of the water column with CTD, velocity and optical probes would be an essential feature. (U)

AD-A056 233 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Physical and Chemical Data. Expedition X, 20-25 April 1965. LA PARED Expedition, 30 April - 17 May 1965. STUDENT TRAINING Cruise, 28 August - 6 September 1965 and MUDDAUBER Expedition, 29 October - 16 December 1965. (U)

DESCRIPTIVE NOTE: Data rept.
FEB 78 103P
REPT. NO. SIO-REF-78-4
CONTRACT: N00014-75-C-0152

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanography, *Training, Students, Coastal regions, Zooplankton, California, Oceanographic ships, Hydrographic surveying, Upwelling, Chemical oceanography (U)

This report presents data collected during 1965 on Expedition 'X', LA PARED Expedition, a STUDENT TRAINING CRUISE and MAUDDAUBER Expedition. Preceding the tabulated data for each cruise are: (1) a description of the principal objective and the sponsoring agency; (2) the hydrographic work carried out on the cruise; (3) a chart of the station positions; (4) a list of scientific personnel participating in the collection of data; and (5) a list of publications utilizing the cruise data. (Author) (U)

AD-A056 221 8/3 8/10
ROYAL AUSTRALIAN NAVY RESEARCH LAB EDGECLIFF

Measurement of Surface Currents Around an Eddy. (U)

DESCRIPTIVE NOTE: Technical note,
OCT 77 27P Nilsson,Carl S. ;
REPT. NO. RANRL-TN-5/77

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Eddy currents, *Oceanographic data, Navigation satellites, Naval research laboratories, Ocean surface, Measurement, Ocean bottom topography, Marine meteorology, Drift, Australia, Ocean models (U)
IDENTIFIERS: HMAS KIMBLA vessel (U)

A closed eddy off East Australia was surveyed during the period 8-13 December 1974 by HMAS KIMBLA. A comparison of dead reckoning data with a series of satellite navigation fixes yielded a series of total current measurements around the eddy. These observed values are compared to the current vectors expected from the measured dynamic height topography. The comparison gives the average enhancement factor applicable to normal geostrophic current due to centrifugal force around the eddy. The factor 1.25 is shown to be consistent with the eddy dimensions and related to the Rossby radius of deformation. The data are also analysed for a mean barotropic flow, giving a value for the mean eddy motion of 5 + or - 5 cm/sec to 045 deg + or - 45 deg. (Author) (U)

AD-A055 741 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Bibliography and Inverse Analysis of the Trimoored Internal Wave Experiment (IWEX). (U)

DESCRIPTIVE NOTE: Technical rept. 1973-1977, APR 78 247P Brisco,M. G. ;Joyce,T. M. ;Willebrand,J. ;Mueller,P. ;Olbers,D. J. ;
REPT. NO. WHOI-78-10
CONTRACT: N00014-74-C-0262, N00014-76-C-0197

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with Johns Hopkins Univ. Laurel, MD. Applied Physics Lab.

DESCRIPTORS: *Ocean waves, *Internal waves, Data acquisition, Mooring, Time series analysis, Statistical analysis, Matrices(Mathematics) (U)
IDENTIFIERS: Internal wave experiment, IWEX(Interal Wave Experiment), Inverse problems, Likelihood ratio tests, WUNR083400, WUNR083004 (U)

The papers, reports, and un-referred notes that have been published over the five-year period 1973-1977 on the Internal Wave Experiment (IWEX) or using data from IWEX are included in the bibliography. A journal article on the inverse analysis (based on the report that is bound as part of this W.H.O.I. Technical Report) appeared in 1978 in Journal of Geophysical Research, Vol. 83, pp. 479-500, authored by Muller, Olbers, and Willebrand. (Author) (U)

AD-A055 725 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Cruise Data Report, R/V Atlantis II 93 Leg 7. (U)

DESCRIPTIVE NOTE: Technical rept., MAY 78 32P Groman,Robert C. ;Dunworth, Jane A. ;
REPT. NO. WHOI-78-34
CONTRACT: N00014-74-C-0262, NSF-OCE-75-21522

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Indian Ocean, Marine geology, Marine geophysics, Ocean bottom, Core sampling, Geomagnetism, Gravity, Deep oceans, Hydrographic surveying (U)
IDENTIFIERS: Mascarene Basin, Amirante Trench, Somali Basin, Ocean basins, Submarine trenches, WUNR083004 (U)

The R/V ATLANTIS II Cruise 93 Leg 7 left Port Louis, Mauritius, 8 April 1976 on a 29 day geophysical and geological survey in the Mascarene and Somal. Basins in the Western Indian Ocean. Seventeen piston cores were successfully recovered in the Mascarene Basin, Amirante Trench and Somali Basin regions. Single channel continuous seismic profiles were made on 2920 km ship's track in the Somali Basin. Echo soundings, total geomagnetic field and gravity field data were collected throughout the entire leg. The R/V ATLANTIS II arrived in Mombasa, Kenya, on 6 May 1976. Summary charts of the underway data collected during this cruise are provided. (U)

AD-A055 530 8/3 8/10
OFFICE OF NAVAL RESEARCH NSTL STATION MS

Physical Oceanography Program. (U)

DESCRIPTIVE NOTE: Rept. for FY 1977-1978,
JUN 78 203P Wilson,W. Stanley ;Kirk,
Robert G. ;Lange,R. Edward ;Paskausky,David
F. ;
PROJ: RR03103
TASK: RR0310301

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean waves, *Sea water, *Open water, *Ocean currents, Gulf Stream, Boundary layer, Ocean bottom, Mixing, Layers, Internal waves, Underwater sound, Microstructure, Remote detectors, Ocean environments, Air water interactions, Indian Ocean, Atlantic Ocean, Naval research, Military oceanography, Bibliographies (U)
IDENTIFIERS: Eddies(Ocean currents), Ocean fronts, PE61153N (U)

This report includes a brief descriptoin of (1) the status of research for each of eleven different areas of physical oceanography; (2) each of the seven multi-investigator, multi-institutional, and multi-disciplinary projects which ONR 481 jointly sponsors; (3) each of the 99 individual projects which ONR 481 sponsors; and (4) all referred journal articles appearing during 1976-78. The objective of the Physical Oceanography Program is to improve understanding of those of those open-ocean physical processes which are of fundamental scientific importance and which impact on present or potential Naval operations. It is a mission-oriented program, and it assumes that such an improved understanding will better enable the Navy to use the ocean environment to its own advantage. (U)

AD-A054 850 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Stable Isotopic Fractionation, Climate Change and Episodic Stagnation in the Eastern Mediterranean during the Late Quaternary. (U)

DESCRIPTIVE NOTE: Journal article,
MAY 77 20P Vergnaud-Grazzini,Colette ;
Ryan,William B. F. ;Cita,Maria Bianca ;
REPT. NO. LDGO-2544
CONTRACT: N00014-75-C-0210

UNCLASSIFIED REPORT
Availability: Pub. in Marine Micropaleontology, v2 p353-370 1977.

DESCRIPTORS: *Mediterranean Sea, *Marine geology, *Micropaleontology, Foraminifera, Climate, Ocean bottom sampling, Stagnation, Core sampling, Reprints (U)
IDENTIFIERS: Sapropel, Quaternary period, WUNR083142 (U)

Reprint: Stable Isotopic Fractionation, Climate Change and Episodic Stagnation in the Eastern Mediterranean during the Late Quaternary.

AD-A054 412 8/3
RENSSELAER POLYTECHNIC INST TROY N Y DEPT OF MATHEMATICAL SCIENCES

Use of Analytical Modeling and Limited Data for Prediction of Mesoscale Eddy Properties. (U)

DESCRIPTIVE NOTE: Technical rept., APR 78 60P Jacobson,M. J. ;Siegmann, W. L. ;Henrick,R. F. ;Clark,J. G. ;
REPT. NO. RPI-MATH-119
CONTRACT: N00014-76-C-0288

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Eddy currents, Mathematical models, Analytic functions, Drift, Temperature gradients, Perturbations, Salinity, Time series analysis, Data acquisition, Bathythermograph data, Mooring buoys, Fluid dynamics, Geophysics (U)
IDENTIFIERS: WUNR386606 (U)

The use of analytical modeling in the study of oceanic eddies is considered. Limited observational data, in combination with eddy models, can be used to obtain analytical approximations to environmental effects, including current and temperature perturbations, throughout the eddy. Techniques which efficiently use discrete measurements are presented to accurately specify any given analytical model containing an arbitrary number of parameters to an observed eddy. Questions of unique parameter specification and data sufficiency are considered for various data types and amounts, using a previously-derived eddy model. Examples with bathythermograph data are presented, in which eddy size, strength, and center positon are to be determined. AXBT data is emphasized, and an investigation is made of the influence of the number of such instruments on the accuracy of parameter estimates. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOMO7

AD-A054 401 8/10
LOUISIANA STATE UNIV BATON ROUGE COASTAL STUDIES INS

A Collection of Reprints. (U)

APR 78 108P
REPT. NO. TR-246, TR-247
CONTRACT: N00014-75-C-0192

UNCLASSIFIED REPORT
Availability: Pub. in various jnls.
SUPPLEMENTARY NOTE: Compilation of AD-A047 457, AD-A046 771, AD-A046 346, AD-A046 772, AD-A051 591 and AD-A049 106.

DESCRIPTORS: *Oceanography, *Coastal regions, Marine geology, Tundra, Surface roughness, Sediment transport, Beaches, Reefs, Remote detectors, Telemeter systems, Reprints (U)
IDENTIFIERS: Suspended sediments (U)

Reprint: A Collection of Reprints.

AD-A054 400 8/10 17/5
LOUISIANA STATE UNIV BATON ROUGE COASTAL STUDIES INST

Comparison on Onshore and Offshore Radiosondings and the Correction of Sea-Surface Temperature from Satellite Infrared Measurements. (U)

DESCRIPTIVE NOTE: Technical rept.,
78 9P Hsu,S. A. ;Rouse,L. J. , Jr.;Huh,Oscar K. ;
REPT. NO. TR-261
CONTRACT: N00014-75-C-0192

UNCLASSIFIED REPORT
Availability: Pub. in Symposium on Meteorological Observations and Instrumentation (4th), Preprint Volume, Denver, CO. 10-14 Apr 78.

DESCRIPTORS: *Ocean surface, *Surface temperature, Radiosondes, Infrared detectors, Oceanographic data, Reprints (U)
IDENTIFIERS: WUNR388002 (U)

Reprint: Comparison on Onshore and Offshore Radiosondings and the Correction of Sea-Surface Temperature from Satellite Infrared Measurements.

AD-A053 122 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Winnowing of Recent and Late Quaternary Deep-Sea Sediments: Colombia Basin, Caribbean Sea. (U)

DESCRIPTIVE NOTE: Journal article,
MAR 76 12P Prell,Warren L. ;
REPT. NO. LDGO-2574
CONTRACT: N00014-75-C-0210

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Sedimentary Petrology, v47 n4 p1583-1592 Dec 77.

DESCRIPTORS: *Ocean bottom soils, *Caribbean Sea, Sedimentation, Ocean currents, Sediment transport, Calcium compounds, Carbonates, Reprints (U)
IDENTIFIERS: Calcium carbonates, WUNR083142 (U)

Sediments of the Colombia Basin, Caribbean Sea, contain evidence of current winnowing. Although bottom photographs reveal a relatively tranquil bottom over most of the basin, current smoothing of the seafloor is observed on and adjacent to the Hess and Beata Escarpments. Current scour is observed at one location on the Hess Escarpment. The proportion of foraminiferal, coccolith, and clay components in 52 surface sediment samples suggests that fine particles (including coccolith carbonate) are being sorted and removed. The foraminifera to total CaCO3 ratio (F/C) is highest on and adjacent to the major escarpments and reflects the increased foraminiferal content relative to total CaCO3 caused by partial removal of the fine fraction coccolith carbonate. The increased currents associated with the escarpments are caused by streamlining and acceleration of water masses as they pass around the obstructions. The lack of erosional bed forms as revealed by bottom photographs and absence of fractionation towards larger foraminifera shows that only fine particles are being sorted and removed. The erosion associated with current smoothing of the bottom is probably responsible for the observed winnowing. Sediment cores from winnowed areas (F/C > .60) have irregular carbonate curves, more small-scale CaCO3 variation, hiatuses, and mixed faunas when compared to cores from unwinnowed areas (F/C < .50). (U)

AD-A053 045 8/10 13/10
COAST GUARD WASHINGTON D C OCEANOGRAPHIC UNIT

Oceanographic Observations. North Atlantic Ocean, Station Echo. Terminal Report 1966-1973. (U)

DESCRIPTIVE NOTE: Oceanographic rept., SEP 77 701P Longacre,Adrian W. ;
REPT. NO. USCG-373-72

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *North Atlantic Ocean, Coast Guard research, Coast Guard ships, Oceanographic ships, Salinity, Surface temperature, Ocean surface, Sea water, Depth, Seasonal variations, Atmospheric temperature, Isotherms, Oxygen, Tables(Data) (U)

Observed temperature and salinity data, plus sigma-t values and sound velocities are presented for 1620 oceanographic stations occupied by U.S. Coast Guard Cutters at Ocean Station ECHO(centered at 35 deg 00'N, 48 deg 00'W) from January 1969 through June 1973. All data, including that previously reported, was averaged by month. Plots of average temperature and average salinity versus time and average depth of isotherms and isohalines versus time are plotted by month for all patrols since September 1966. Representative T-S diagrams are included along with a typical plot of the 1st standard devitation of the monthly average temperature and salinity versus depth. The various plots are analyzed to examine annual cycles at ECHO. The sea surface temperature at ECHO reaches a monthly average maximum of about 26C in August and a minimum usually of about 18C in March. The surface effects are largely limited to the upper 200 meters of the water column. A series of temperature and salinity cycles below 200 meters of two to three months duration, probably a barotropic response, is noted at intermediate depths. Also, dissolved oxygen measurements are analyzed for two cruises. (U)

AD-A053 043 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Physical and Chemical Data. ARIES Expedition. Leg I, 22 November-28 December 1970, Leg II, 13 January-14 February 1971, Leg VI, 14 June-17 July 1971. ANTIPODE Expedition. Leg IV, 29 August-17 September 1970, Leg XII, 27 May 1971, Leg XIII, 30 June-2 July 1971. (U)

DESCRIPTIVE NOTE: Data rept.
NOV 77 99P
REPT. NO. SIO-REF-77-23
CONTRACT: N00014-C-75-0152

UNCLASSIFIED REPORT

DESCRIPTORS: *Hydrographic surveying, *Oceanographic data, Chemical analysis, Physical properties, North Atlantic ocean, Tables(Data), Temperature measuring instruments, Deep submergence, Thermometers, Sea water, Sampling, Nutrients, Salinity, Oxygen (U)
IDENTIFIERS: ARIES project, ANTIPODE project (U)

This report presents hydrographic data for ARIES Expedition Legs I, II and VI, and ANTIPODE Expedition Legs IV, XII and XIII. Data from ARIES Legs III and IX will appear in a subsequent report. Data from ARIES Leg IV is too sparse to warrant publication. Both expeditions have had data previously published. (Author) (U)

AD-A052 552 8/3
CORPS OF ENGINEERS SAN FRANCISCO CALIF SOUTH PACIFIC DIV

Wave Data Meeting. Memorandum for the Record, (U)

NOV 77 237P Magoon,Orville T. ;Edmisten, J. Robert ;

UNCLASSIFIED REPORT
Availability: Document partially illegible.
SUPPLEMENTARY NOTE: Report on Tentative standards. Meeting held on 26-27 Oct 77 at San Francisco, CA.

DESCRIPTORS: *Ocean waves, *Oceanographic data, Standards, Measurement, Sampling, Coastal regions, California, Data bases, Data acquisition, Cost estimates, Buoys, Pressure transducers, Height, Seasonal variations, Symposia (U)

This report provides interim standards for measurement and recording of ocean waves to be used in the proposed California Coastal Data Collection program. This report is an extension of the proceedings of the international symposium on ocean wave measurement and analysis (B. L. Edge and O. T. Magoon) ASCE 1974 Volume 1 and 2) and presents rationale used in recommending the interim standards. (U)

AD-A052 501 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Deep Western Boundary Current in the Eastern Indian Ocean. (U)

DESCRIPTIVE NOTE: Technical rept.,
NOV 76 6P Warren,Bruce A. ;
REPT. NO. WHOI-78-9, WHOI-CONTRIB-3854
CONTRACT: N00014-74-C-0262

UNCLASSIFIED REPORT
Availability: Pub. in Science, v196 p53-54, 1 Apr 77.

DESCRIPTORS: *Ocean currents, *Indian Ocean, Boundaries, Deep depth, Circulation, Reprints (U)
IDENTIFIERS: WUNR083004 (U)

Historical temperature data suggest that the deep circulation of the eastern Indian Ocean is a system separate from that in the west, with its water being supplied directly from the south. If so, then circulation theory would require that the northward flow take the form of a narrow western boundary current along the Ninetyeast Ridge. Recent observations demonstrate the existence of this current, and indicate a volume transport for it of about 4,000,000 cubic meters per second. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A052 081 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Surface Water Temperatures at Shore Stations, United States West Coast 1974. (U)

DESCRIPTIVE NOTE: Data rept.
AUG 77 53P
REPT. NO. SIO-REF-77-12
CONTRACT: N00014-75-C-0152

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean surface, *Surface temperature, *Salinity, Coastal regions, United States, Pacific Ocean, Tables(Data), Oceanographic data (U)
IDENTIFIERS: WUNR388127 (U)

This report presents temperature and salinity data observed during 1974 at shoreline stations along the west coast of North America from the Strait of Juan de Fuca, Washington to La Jolla, California. The data consists of daily recorded temperature and salinity values when available, with monthly means, ranges and standard deviations based on these observations. Also computed are yearly mean, maximum and minimum values for those stations with some observations for every month of the year. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A052 054 8/10 14/3 9/6 9/2
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

W.H.O.I./Brown Conductivity, Temperature, and Depth Microprofiler. (U)

DESCRIPTIVE NOTE: Technical rept.,
FEB 78 271P Brown,N. L. ;Morrison,G. K. ;
REPT. NO. WHOI-78-23
CONTRACT: N00014-66-C-0241

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Measuring instruments, *Tape recorders, Telemeter systems, Profiles, Electrical conductivity, Temperature, Depth, Sampling, Electrodes, Thermistors, Resistance thermometers, Pressure transducers, Electric cables, Signal generators, Digital to analog converters (U)
IDENTIFIERS: WUNR083004 (U)

A Conductivity, Temperature and Depth (CTD) profiler has been designed to make precise fine scale measurements of these physical parameters in the ocean. This CTD system consists of a shipboard Data Terminal deck unit and an underwater unit which provides continuous sampling of the three variables as it is lowered into the water. Additional sensors can be added to measure other variables; the most common is dissolved oxygen. This report is a detailed description of the CDT System and the includes the necessary documentation to operate and maintain the equipment. (Author) (U)

AD-A052 017 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

On the Deep General Circulation in the Western North Atlantic. (U)

DESCRIPTIVE NOTE: Technical rept.,
OCT 76 12P Schmitz,William J. , Jr;
REPT. NO. WHOI-78-3, WHOI-CONTRIB-3779
CONTRACT: N00014-66-C-0241, N00014-74-C-0262

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Marine Research, v35 n1 p21-28 1977.

DESCRIPTORS: *North Atlantic Ocean, *Ocean currents, *Eddy currents, Circulation, Deep oceans, Gulf Stream, Reprints (U)
IDENTIFIERS: Deep general circulation, Mesoscale eddies, WUNR083004 (U)

Very large (5-10 cm/s) long-term averaged zonal flows have been observed near 4000 m depth in the vicinity of a recently hypothesized (Worthington, in press) horizontally restricted subtropical gyre in the deep western North Atlantic. The Reynolds stresses associated with low frequency fluctuations may play a significant role in the dynamics of this deep mean flow, possibly inducing a significant downstream increase in transport of the Gulf Stream, perhaps driving the deep gyre. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A051 905 8/3 8/7
LOUISIANA STATE UNIV BATON ROUGE COASTAL STUDIES INST

Surface Waves and Bottom Sediment Response. (U)

DESCRIPTIVE NOTE: Technical rept.,
DEC 76 15P Suhayda,Joseph N. ;
REPT. NO. TR-258
CONTRACT: N00014-75-C-0192

UNCLASSIFIED REPORT
Availability: Pub. in Marine Geotechnology, v2 p135-146 1977.

DESCRIPTORS: *Surface waves, *Ocean bottom, *Sediments, Louisiana, Oscillation, Accelerometers, Dynamic response, Reprints (U)
IDENTIFIERS: Wave theory, WUNR388002 (U)

Field measurements of bottom oscillations and wave characteristics have been made in a study of the interaction of fine-grained sediments and surface waves. A wave staff, pressure sensor, and accelerometer were used in East Bay, Louisiana, an area that has a fine-grained clay bottom. The accelerometer contained three solid-state accelerometers mounted at right angles. The instrument was placed about 0.3 m below the mudline. The results of the study indicate that bottom motions under wave action show well-defined periodic features. The bottom sediments appear to be undergoing an elastic response to bottom pressures, such that the bottom is depressed under a surface wave crest. Under the range of bottom pressures measured, bottom displacement varied linearly with bottom pressure. Measured bottom pressures were up to 35% larger than predicted by linear wave theory. The effect of a movable bottom on wave pressure is considered. The energy lost from the surface wave to the bottom in forcing the bottom response is shown to be significant and larger than the energy lost to bottom friction. (Author) (U)

AD-A051 119 8/3
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

The Relationship between the Grid Size and the Coefficient of Nonlinear Lateral Eddy Viscosity in Numerical Ocean Circulation Models, (U)

MAR 75 11P Haney,Robert L. ;Wright, Julian M. , Jr;

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Computational Physics, v19 n3 p257-266 Nov 75.

DESCRIPTORS: *Eddy currents, Ocean currents, Oscillation, Mass flow, Wind, Viscosity, Reprints (U)
IDENTIFIERS: Eddy viscosity coefficients, Nonlinear viscosity, Numeral ocean circulation models, WUNR083275 (U)

When a constant coefficient of lateral eddy viscosity VO is used in ocean circulation models, a false computational space oscillation is generated in the western boundary region if VO is smaller than a critical value. The use of a nonlinear eddy viscosity coefficient based upon two-dimensional turbulence theory is shown to permit the use of an eddy viscosity which, away from the western boundary region, is at least an order of magnitude smaller than the above critical value. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A050 707 8/7 8/3
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Exotic Middle Miocene Sediment from Cape Verde Rise and its Relation to Piercement Structures, (U)

77 7P Embley,Robert W. ;Jacobi, Robert D. ;
REPT. NO. LDGO-2553
CONTRACT: N00014-75-C-0210, NSF-GA-27281

UNCLASSIFIED REPORT
Availability: Pub. in The American Association of Petroleum Geologists Bull., v61 n11 pt1 of 2 p2004-2009 Nov 77.

DESCRIPTORS: *Ocean bottom sampling, *Sedimentation, *Structural geology, Lithology, Seismic data, Seafloor spreading, Tectonics, South Atlantic Ocean, Ocean ridges, Marine geology (U)
IDENTIFIERS: Plate tectonics, WUNR083142 (U)

A clast of early middle Miocene sediment was recovered in a piston core on the lower Cape Verde Rise. The core was taken in one of a series of slightly elevated patches of seafloor which appear to be the surface expression of piercement structures. The mechanism which emplaced the exotic Miocene inclusion within 3 m of the seafloor probably is related to the intrusion tectonics of the underlying piercement structures although the possibility of its arrival at the present site by a mass flow from upslope cannot be eliminated as an alternative. (Author) (U)

AD-A050 487 8/3
MASSACHUSETTS INST OF TECH CAMBRIDGE DEPT OF EARTH AND PLANETARY SCIENCES

Tidal Charts of the Indian Ocean North of 15 deg S, (U)

MAY 77 7P McCammon,Catherine ;Wunsch, Carl ;
CONTRACT: N00014-75-C-0291, NSF-OCE-72-01384

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v82 n37 p5993-5998, 20 Dec 77.

DESCRIPTORS: *Ocean tides, *Indian Ocean, Charts, Tides, Data reduction, Tables(Data), Reprints (U)
IDENTIFIERS: WUNR083157 (U)

The writers have constructed new tidal charts of the northern Indian Ocean by empirical means from existing data and from recent deep pressure gage measurements. A brief comparison is made to Dietrich's (1944) charts and to some existing numerical models of the region. The deviations from Dietrich's charts are significant but not drastic. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A050 421 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Cruise Data Report. R/V ATLANTIS II 93, Legs 5 and 6, Central Indian Ocean Triple-Junction. (U)

DESCRIPTIVE NOTE: Technical rept.,
DEC 77 62P Hoskins,Hartley ;Gegg, Stephen R. ;Tapscott,Christopher R. ;
REPT. NO. WHOI-77-74
CONTRACT: N00014-74-C-0262

UNCLASSIFIED REPORT

DESCRIPTORS: *Hydrographic surveying, *Indian Ocean, *Oceanographic data, Ocean bottom topography, Bathymetry, Oceanographic ships, Magnetic fields, Gravitational fields, Profiles, Seismic reflection, Air guns, Dredging, Core sampling, Magnetic anomalies (U)
IDENTIFIERS: ATLANTIS 2 vessel, WUNR083004 (U)

The central Indian triple-junction was surveyed with eleven thousand kilometers of bathymetric, magnetic field, and gravity profiles. Seven thousand kilometers of seismic reflection profiles were made using primarily a 40 cu. in. air gun. Sixteen dredges, three gravity cores and one hydrocast were made. Positions of the ship were determined primarily by satellite navigation. The underway data are plotted on a series of Mercator charts and as a composite profile plot. Compilation sheets of the bathymetry, magnetic anomaly and free air gravity for the survey area are presented. (U)

AD-A050 398 8/3 8/7
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Tidal Components of Currents in Submarine Canyons, (U)

SEP 75 10P Shepard,Francis T. ;
CONTRACT: N00014-75-C-0152, N00014-69-A-0200-6049

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geology, v84 p343-350 1976.

DESCRIPTORS: *Submarine canyons, *Tidal currents, *Ocean currents, Sediment transport, Velocity, Pacific Ocean, Deep water, Horizontal orientation, Seasonal variations, Reprints (U)

Alternating up- and downcanyon currents in the heads of submarine canyons have high-frequency reversals, and, in general, the time interval between alternations increases with depth of the canyon axis until it approximates the period of semidiurnal tides. The depth at which this semidiurnal relationship is found is apparently related to the tidal range. According to available information, with a tidal range of 1.5 and 2.5 m, the depth necessary to show the relationship between the current reversal period and the semidiurnal tide is usually between 250 and 350 m; whereas, if the range is of the order of 1 or less, the depth necessary to develop the tidal relationship is as great as 1,500 m. In three canyons with relatively large tidal range, records taken from depths of more than 1,400 m have alternation cycles shorter than the period of the semidiurnal tide and more irregular than the records from depths between 250 and 1,400 m. In the few available long-period records, the length of the current reversal cycle was found to be greater during spring tides than during neap tides. Cycles as long as the 25-hour diurnal tides were observed in portions of a few records where during large spring tides the heights of the two daily tides contrasted greatly. (U)

AD-A050 315 8/3 12/1 9/2
COASTAL ENGINEERING RESEARCH CENTER FORT BELVOIR VA

A Spatially Integrated Numerical Model of Inlet Hydraulics. (U)

DESCRIPTIVE NOTE: Final rept.,
NOV 77 105P Seelig,William N. ;Harris, D. Lee ;Herchenroder,Barry E. ;
REPT. NO. CERC-GITI-14

UNCLASSIFIED REPORT

DESCRIPTORS: *Inlets(Waterways), *Ocean tides, *Ocean waves, Mathematical models, Computer program documentation, FORTRAN, Differential equations, Equations of motion, Mathematical prediction, Dynamic response, Bays, Storms, Tidal currents, Momentum, Continuity, Computer programs, Hydrodynamics, Spatial distribution (U)

This report discusses the development of a simple numerical model for the prediction of coastal inlet velocities, discharge, and resulting bay level fluctuations. The model is a time-marching model that simultaneously solves the area-averaged momentum equation for the inlet and the continuity equation for the bay. It is assumed that the bay surface elevation remains horizontal as it rises and falls. At each time step the geometric and hydraulic factors describing the inlet-bay system are calculated by evaluating flow conditions throughout the inlet and by spatially integrating this information to determine coefficients of the first-order differential equations. This model, which includes the important terms in the equation of motion, is flexible, easy and inexpensive to use, and gives a good estimate of the inlet-bay system hydraulics for various conditions. The model can be used for single or multiple inlets, bays, and seas. This report includes the model theory and derivation, a FORTRAN computer program for solving the model equations, and instructions for use of the program. Examples are given to illustrate how the model may be used to predict coastal inlet response to astronomical tides, seiching, tsunamis, and storm surges. (Author) (U)

AD-A050 225 8/10
WASHINGTON UNIV SEATTLE APPLIED PHYSICS LAB

Oceanographic Measurements in the Chukchi Sea and Baffin Bay - 1976, (U)

OCT 77 107P Garrison,G. R. ;
REPT. NO. APL-UW 7710
CONTRACT: N00123-74-C-2064, N00123-77-C-1013
PROJ: 62759N, F52555
TASK: ZF52555001

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Chukchi Sea, *Baffin Island, Oceanographic equipment, Salinity, Alaska, Freezing, Temperature (U)
IDENTIFIERS: *Baffin Bay, Barrow Canyon, PE62759N, WUMR01C2 (U)

An oceanographic survey was conducted by helicopter in April 1976 in the ice-covered Chukchi Sea. This survey verified the existence of the bottom layer found a year earlier that had a temperature near the freezing point and a salinity relatively high for the Chukchi Sea. This bottom layer flows along Alaska's northwest coast, through the Barrow Canyon, and into the Arctic Ocean. Its path is clearly visible in the vertical profiles of temperature and salinity taken at several lines of stations across the coastal zone. The flow down the Barrow Canyon is opposed by a westward spreading of the temperature-maximum layer of the western Arctic Basin and by an apparent uprising, or surge, of warm, saline Atlantic water from its usual depth of 140 m in the Arctic Ocean to a depth of 75 m. Similar conditions were observed in the spring of 1975. Some oceanographic measurements from an icebreaker were also conducted in Davis Strait and Baffin Bay during late February and March 1976. Temperature and salinity profiles revealed a deep, warm layer in Davis Strait which extended northward, with diminishing temperature, into Baffin Bay. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A049 906 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Structure of Colombia Basin, Caribbean Sea, from Profiler-Sonobuoy Measurements, (U)

76 9P Houtz,Robert E. ;Ludwig, William J. ;
REPT. NO. LDGO-2547
CONTRACT: N00014-75-C-0210, N00014-75-C-1126

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v82 n30 p4861-4867, 10 Oct 77.

DESCRIPTORS: *Basins(Geographic), *Caribbean Sea, *Ocean bottom topography, Seismic data, Ocean ridges, Profiles, Sedimentation, Sonobuoys, Air guns, Seismic waves, Sound waves, Velocity, Refraction, Measurement, Reprints (U)
IDENTIFIERS: Colombia basin, WUNR083142 (U)

Seismic velocities and layer depths were computed from 26 air gun/sonobuoy profiles made along a southwesterly traverse of the Colombia basin. Penetration to the deeper crustal layers and the upper mantle was achieved with a large air gun sound source. The crustal structure of the Colombia basin is a complex arrangement of basement ridges and interposed basins that is masked by an overburden of thick, flat-lying sediments. Earlier two-ship refraction stations were inadvertently located on the basement ridges, which had led to the mistaken conclusion that the basin contains unusually thick crust. Mantle refractions from two sonobuoy profiles in the undisturbed parts of the basin suggest a normal oceanic crust that has been depressed by the addition of about 3 km of sediment. The reflection records from the Columbia basin show that the basement rocks have considerable relief, unlike the smooth B' (acoustic basement) surface in the Venezuela basin. Furthermore, there is no consistent reflector in the sediments that can be correlated with horizon A' in the Venezuela basin. Sound velocity in the sediments increases at a normal rate south of about 14 N, but to the north where there is no intermediate (horizon A' type) reflector, the rate of increase is unusually high, owing to a thinner overburden on a high-speed sediment layer. Accordingly, (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOMO7

AD-A049 893 8/3 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Scales of Motion in the Deep Gulf Stream and Across the Continental Rise. (U)

DESCRIPTIVE NOTE: Technical rept.,
MAY 76 31P Luyten,James R. ;
REPT. NO. WHOI-77-50, WHOI-CONTRIB-3778
CONTRACT: N00014-74-C-0262, N00014-76-C-0197

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Marine Research, v35 n1 p49-74 1977.
SUPPLEMENTARY NOTE: Also prepared on grant NSF-OCE74-01282.

DESCRIPTORS: *Gulf Stream, *Ocean currents, Continental shelves, North Atlantic Ocean, Deep water, Continental slopes, Flowmeters, Measurement, Scaling factors, Reprints (U)
IDENTIFIERS: WUNR083400, WUNR083004 (U)

An array of 15 moorings with 33 current meters was deployed in the deep water across the Continental Rise near 70 deg W for eight months. The data thus obtained provide the first synoptic view of the large amplitude, long period variability associated with the deep Gulf Stream region, shown here to have meridional scales of 150 km but zonal scales of less than 50 km. These fluctuations are associated with temperature variation of 0.5 C and exhibit a southward phase propagation of 10 cm/sec. The mean flow south of the 4000 meter isobath is principally meridional with a remarkably short zonal scale, less than 50 km. This regime of small zonal scale flow appears to extend to 36 deg N (near 70 deg W) where the generally eastward mean flow dominates. North of the 4000 meter isobath the mean flow is westward and directed along the isobaths. The spatial variability of the statistical properties of the low-frequency variability suggests that the eddy Reynolds stresses are the dominant ageostrophic contribution to the dynamics of the mean flow, doing work on the mean flow over the region between 36 deg N and the 4000 meter isobath. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOMO7

AD-A049 892 8/10 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Large-Scale Variations in Small-Scale Temperature/Salinity Finestructure in the Main Thermocline of the Northwest Atlantic. (U)

DESCRIPTIVE NOTE: Technical rept.,
JUL 75 17P Joyce,Terrence M. ;
REPT. NO. WHOI-77-49, WHOI-CONTRIB-3584
CONTRACT: N00014-74-C-0262

UNCLASSIFIED REPORT
Availability: Pub. in Deep Sea Research, v23 p1175-1186 1976.
SUPPLEMENTARY NOTE: Also Available as WHOI-MODE-CONTRIB-68.

DESCRIPTORS: *Oceanographic data, *Thermoclines, Temperature, Salinity, North Atlantic Ocean, Scaling factors, Gulf Stream, Ocean currents, Reprints (U)
IDENTIFIERS: WUNR083004 (U)

Large-scale variations of temperature/salinity finestructure were observed in the main thermocline of the northwest Atlantic Ocean on an oceanographic section along 70 deg W from the Sargasso Sea to the continental slope. Results suggest that temperature/salinity variability associated with vertical oceanic mixing increases linearly northward as the continental slope and the Gulf Stream are approached from the Sargasso Sea in the south. (U)

AD-A049 890 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Fatty Acids and Pb-210 Geochronology of a Sediment Core from Buzzards Bay, Massachusetts. (U)

DESCRIPTIVE NOTE: Technical rept.,
MAY 76 14P Farrington,John W. ;
Henrichs,Susan M. ;Anderson,Robert ;
REPT. NO. WHOI-77-46, WHOI-CONTRIB-3774
CONTRACT: N00014-66-C-0241, AT(11-1)-3566

UNCLASSIFIED REPORT
Availability: Pub. in Geochimica et Cosmochimica Acta, v41 p289-296 1977.

DESCRIPTORS: *Fatty acids, *Sediments, *Oceanography, Oceanographic data, Ocean bottom soils, Chemical analysis, Reprints (U)
IDENTIFIERS: Buzzards Bay(Massachusetts), Geochronology, WUNR083004 (U)

Four sections of a Pb-210 dated core of 62 cm length from Buzzards Bay, Massachusetts, were analyzed for fatty acids. A comparsion of fatty acids extracted by Soxhelt extraction (unbound fatty acids) with fatty acids extracted by subsequent saponification extraction of the same sample (bound fatty acids) showed the former did not undergo diagenetic loss any faster than the latter. However, compositional differences between bound and unbound fatty acids were apparent in the top section of 1-2 cm and were less apparent in the 54-58 cm section. At least 14% of the bound fatty acids are esterified to non-solvent extractable material. The net conversion of fatty acids to other compounds is 32 microgram/g dry weight sediment over the first 30 yr. after deposition. (Author) (U)

AD-A049 889 8/3 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Horizontal Divergence and Vorticity Estimates from Velocity and Temperature Measurements in the Mode Region. (U)

DESCRIPTIVE NOTE: Technical rept.,
JUL 76 15P Bryden,Harry L. ;Fofonoff, Nick P. ;
REPT. NO. WHOI-77-45, WHOI-CONTRIB-3815
CONTRACT: N00014-66-C-0241, NSF-IDO-75-03962

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Physical Oceanography, v7 n3 p329-337 May 77.

DESCRIPTORS: *Ocean currents, Oceanographic data, Velocity, Horizontal orientation, Equations of motion, Partial differential equations, Vortices, Reprints (U)
IDENTIFIERS: WUNR083004 (U)

Estimates of horizontal derivatives of velocity made by differencing velocity measurements are used to show that the observed velocity field due to low-frequency mesoscale motions during the preliminary Mid-Ocean Dynamics Experiment (MODE-0) field program is horizontally nondivergent within estimated errors. The errors in horizontal derivatives of 1/150,000S are too large for direct estimates of horizontal divergence to be made accurately. The vorticity, however, can be estimated from these horizontal derivatives with an error small compared with its magnitude. There are indications that vortex stretching, estimated from a linear heat balance, may balance the remaining local change of vorticity as expected for baroclinic Rossby waves. In conjunction with a similar result for the perturbation potential energy obtained in this region, this result supports the view that the MODE region is a region of decay, rather than growth, of the low-frequency mesoscale motions. (U)

AD-A049 722 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Review of Heatflow Data from the Mediterranean and Aegean Seas, (U)

76 20P Erickson,A. J. ;Simmons,G. ;Ryan,W. B. F. ;
REPT. NO. LDGO-2447
CONTRACT: N00014-67-A-0108-0004

UNCLASSIFIED REPORT

Availability: Pub. in International Symposium on the Structural History of the Mediterranean Basins, Split (Yugoslavia) 25-29 Oct 76. P263-279 1977.

DESCRIPTORS: *Ocean bottom, *Heat flux, *Mediterranean Sea, Geologic formation, Energy transfer, Aegean Sea, Reprints (U)
IDENTIFIERS: WUNR083142 (U)

The origin of small ocean basins, whether residual fragments of ancient oceans or newly formed by still poorly understood geological processes, is a major unsolved geophysical problem. Theories proposed for the origin of the Eastern and Western Mediterranean and Aegean Seas are varied, but all are ultimately dependent upon thermal energy to provide the uplift, warping, subsidence, or rifting called upon by various investigators. Knowledge of the temperature distribution beneath the Mediterranean and Aegean Seas provides an important constraint on models for the formation of these basins. (Author) (U)

AD-A049 507 8/10 9/5 22/2
NAVAL RESEARCH LAB WASHINGTON D C

Estimation of Marine Environmental Parameters Using Microwave Radiometric Remote Sensing Systems. (U)

DESCRIPTIVE NOTE: Interim rept.,
NOV 77 59P Wisler,Macmillan M. ;
Hollinger,James P. ;
REPT. NO. NRL-MR-3661
PROJ: WF52551
TASK: WF52551718
MONITOR: SBIE AD-E000 096

UNCLASSIFIED REPORT

DESCRIPTORS: *Radiometry, *Microwave equipment, *Oceanography, *Remote detectors, Ocean surface, Surface temperature, Detection, Ocean environments, Statistical analysis, Estimates, Errors, Artificial satellites (U)
IDENTIFIERS: *Remote sensing, Environmental transfer function, LPN-NRL-G01-10, PE62759N (U)

This is an interim report on an ongoing program to develop a passive microwave system for the remote all-weather measurement of sea surface temperature from a satellite platform. It presents a general method for obtaining optimal linear algorithms for the reduction of multifrequency radiometer data to determine marine environmental variables. The mean square errors in determining the environmental variables are also determined thereby enabling the evaluation of different passive microwave radiometric systems. This method, called the 'Environmental Transfer Function', includes in its analysis the error contributions from three sources: errors in measuring microwave brightness temperature, the statistical variances of the environmental parameters, and uncertainties in the equations used to relate the brightness temperatures to the environmental parameters. The mathematical formulation is first developed and then an example application is given to evaluate the remote sensing capability of selected radiometric systems. (Author) (U)

AD-A049 309 8/10 8/3
OREGON STATE UNIV CORVALLIS SCHOOL OF OCEANOGRAPHY

Temperature Microstructure Profiles at Ocean Station P: Preliminary Results from the MILE Experiment. (U)

DESCRIPTIVE NOTE: Technical rept., DEC 77 220P Dillon,T. M. ;Caldwell,D. R. ;
REPT. NO. REF-77-22
CONTRACT: N00014-76-C-0067

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceans, *Oceanographic data, *Temperature gradients, Pressure gradients, Vertical orientation, Depth, Diurnal variations, Wind velocity, Ocean waves, Sea states, Tables(Data), Graphs, North Pacific Ocean, Alaska, Subarctic regions (U)
IDENTIFIERS: WUNR083102 (U)

Preliminary temperature microstructure profiles resulting from the Mixed Layer Experiment at Ocean Station P (144 deg W, 55 deg N) during August-September 1977 are presented. Depth ranges plotted are from 5 meters to 70 meters. The profiles show the behavior of the mixed layer and thermocline before, during, and after two synoptic scale storms. (Author) (U)

AD-A049 124 17/1 20/1 8/10
NAVAL UNDERSEA CENTER SAN DIEGO CALIF

Surface-Duct Sonar Measurements (SUDS I - 1972) Oceanographic Measurements. Volume V. Station 4 Data Report. (U)

DESCRIPTIVE NOTE: Research and development rept. Mar 71-Jan 76, JAN 76 91P Anderson,E. R. ;
REPT. NO. NUC-TP-465-VOL-5
PROJ: F52552
TASK: SF52552602

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-A049 120.

DESCRIPTORS: *Sonar signals, *Ducts, *Ocean surface, *Underwater acoustics, Oceanographic data, Acoustic velocity (U)
IDENTIFIERS: SUDS(Surface-Duct Sonar), Surface-Duct Sonar (U)

This is the fifth in a series of five volumes describing the environmental measurements made during the SUDS I experiments. Volume I discusses the instrumentation used to make the required environmental measurements, the data reduction procedures, an accuracy analysis of the final measurements, and the reconstruction of the experimental tack charts. This volume is a detailed report of the environmental measurements applicable to the acoustic experiments conducted during station 4, where four acoustic experiments were completed. Figure 1 shows the location of the experiments and the track of the source ship. Source ship speed was 3 knots for all runs. The detailed environmental data for each propagation loss run are summarized in the form of charts, plots, and tables in the appendices. Each appendix presents the same kind of data in the same sequence for all propagation loss runs. Additions and omissions are made as appropriate for the run described. Thus the first figure (A-1, B-1, etc.) is a chart showing the locations of source and receiver ships, selected propagation paths, and wind velocity. The second figure (A-2, B-2, etc.) is a chart showing the locations of XBT, (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A049 123 17/1 20/1 8/10
NAVAL UNDERSEA CENTER SAN DIEGO CALIF

Surface-Duct Sonar Measurements (SUDS I - 1972) Oceanographic Measurements. Volume IV. Station 3 Data Report. (U)

DESCRIPTIVE NOTE: Research and development rept. Mar 71-Jan 76,
JAN 76 122P Anderson,E. R. ;
REPT. NO. NUC-TP-465-VOL-4
PROJ: F52552
TASK: SF52552602

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 5, AD-A049 124.

DESCRIPTORS: *Sonar signals, *Ducts, *Ocean surface, *Underwater acoustics, Oceanographic data, Acoustic velocity (U)
IDENTIFIERS: SUDS(Surface-Duct Sonar), Surface-Duct Sonar (U)

This is the fourth in a series of five volumes describing the environmental measurements made during the SUDS I experiments. Volume I discusses the instrumentation used to make the required environmental measurements, the data reduction procedures, an accuracy analysis of the final measurements, and the reconstruction of the experimental track charts. This volume is a detailed report of the environmental measurements applicable to the acoustic experiments conducted during station 3, where five propagation loss runs were completed. Figure 1 shows the location of the experiments and the track of the source ship. Source ship speed was 3 knots for all runs. The detailed environmental data for each propagation loss run are summarized in the form of charts, plots, and tables in the appendices. Each appendix presents the same kind of data in the same sequence for all propagation loss runs. Additions and omissions are made as appropriate for the run described. Thus the first figure (A-1, B-1, etc.) is a chart showing the locations of source and receiver ships, selected propagation paths, and wind velocity. The second figure (A-2, B-2, etc.) is a chart showing the locations of XBT, (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A049 122 17/1 20/1 8/10
NAVAL UNDERSEA CENTER SAN DIEGO CALIF

Surface-Duct Sonar Measurements (SUDC I - 1972) Oceanographic Measurements. Volume III. Station 2 Data Report. (U)

DESCRIPTIVE NOTE: Research and development rept. Mar 71-Jan 76,
JAN 76 77P Anderson,E. R. ;
REPT. NO. NUC-TP-465-VOL-3
PROJ: F52552
TASK: SF52552602

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 4, AD-A049 123.

DESCRIPTORS: *Sonar signals, *Ducts, *Ocean surface, *Underwater acoustics, Oceanographic data, Acoustic velocity (U)
IDENTIFIERS: SUDS(Surface-Duct Sonar), Surface-Duct Sonar (U)

This is the third of five volumes describing the environmental measurements made during the SUDS I experiments. Volume I discusses the instrumentation used to make the required environmental measurements, the data reduction procedures, an accuracy analysis of the final measurements, and the reconstruction of the experimental track charts. This volume contains a detailed report of the environmental measurements applicable to the acoustic experiments conducted during station 2, where four propagation loss runs were completed. Figure 1 shows the location of the experiments and the track of the source ship. Source ship speed was 3 knots for all runs. The detailed environmental data for each propagation loss run are summarized in the form of charts, plots, and tables in the appendices. Each appendix presents the same kind of data in the same sequence for all propagation loss runs. Additions and omissions are made as appropriate for the run described. Thus the first appendix figure (i. e., A-1, B-1, etc.) is a chart showing the locations of source and receiver ships, selected propagation paths, and wind velocity. The second figure (A-2, B-2, etc.) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A049 121 17/1 20/1 8/10
NAVAL UNDERSEA CENTER SAN DIEGO CALIF

Surface-Duct Sonar Measurements (SUDS I - 1972) Oceanographic Measurements. Volume II. Station 1 Data Report. (U)

DESCRIPTIVE NOTE: Research and development rept. Mar 71-Jan 76,
JAN 76 99P Anderson,E. R. ;
REPT. NO. NUC-TP-465-VOL-2
PROJ: F52552
TASK: SF52552602

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Errata sheet inserted. See also Volume 3, AD-A049 122.

DESCRIPTORS: *Sonar signals, *Ducts, *Ocean surface, *Underwater acoustics, Oceanographic data, Acoustic velocity (U)
IDENTIFIERS: SUDS(Surface-Duct Sonar), Surface-Duct Sonar (U)

This is the second of five volumes describing the environmental measurements made during the SUDS I experiments. Volume I discusses the instrumentation used to make the required environmental measurements, the data reduction procedures, an accuracy analysis of the final measurements, and the reconstruction of the experimental track charts. This volume contains a detailed report of the environmental measurements applicable to the acoustic experiments conducted during station 1, where five propagation loss runs were completed. Figure 1 shows the track of the source ship during these experiments. Source ship speed was 3 knots for runs 1-4 and 6 knots for run 5. The detailed environmental data for each propagation loss run are summarized in the form of charts, plots, and tables in the appendices. Each appendix presents the same kind of data in the same sequence for all propagation loss runs. Additions and omissions are made as appropriate for the run described. Thus the first appendix figure (i. e., A-1, B-1, etc.) is a chart showing the locations of source and receiver ships, selected propagation paths, and wind velocity. The second figure (A-2, B-2, etc.)

(U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A049 120 17/1 20/1 8/10
NAVAL UNDERSEA CENTER SAN DIEGO CALIF

Surface-Duct Sonar Measurements (SUDS I - 1972) Oceanographic Measurements. Volume I. Instrumentation, Data Reduction Procedures, and Accuracy Analysis. (U)

DESCRIPTIVE NOTE: Research and development rept. Mar 71-Jan 76,
JAN 76 59P Anderson,E. R. ;
REPT. NO. NUC-TP-465-VOL-1
PROJ: F52552
TASK: SF52552602

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-A049 121.

DESCRIPTORS: *Sonar signals, *Ducts, *Ocean surface, *Underwater acoustics, Oceanographic data, Acoustic velocity, Very low frequency, Temperature, Salinity (U)
IDENTIFIERS: SUDS(Surface-Duct Sonar), Surface-Duct Sonar (U)

During 9-24 February 1972 a series of 18 propagation loss experiments were conducted in three deep-water areas located southwest of San Diego, California. These measurements were designed to measure near-surface continuous wave (CW) pulse propagation losses and propagation losses for explosive sources out to ranges of 45 kyd and to obtain detailed supporting environmental measurements. Measurements were made at CW frequencies of 0.4, 1.0, 1.5, 2.5, 3.5, and 5.0 kHz. The explosive measurements were analyzed at 0.40, 0.63, 1.00, 1.60, 2.50, 3.15, 5.00, and 10.00 kHz. This is the third in a series of three NUC technical Papers reporting the results of these measurements. This report contains the supporting environmental measurements made during the four acoustic stations. It consists of five volumes. Volume I discusses the instrumentation used to make the required environmental measurements, the data reduction procedures, an accuracy analysis of the final measurements, and the method of reconstruction of the experiment track charts.

(U)

AD-A049 106 13/10 9/6 8/10 8/3
LOUISIANA STATE UNIV BATON ROUGE COASTAL STUDIES INST

An Expendable Telemetry Buoy for Coastal Oceanography. (U)

DESCRIPTIVE NOTE: Technical rept., 77 7P
Fredericks,Rodney G. ; Wiseman,William J. , Jr.;Whelan,William T. ;

REPT. NO. TR-254
CONTRACT: N00014-75-C-0192

UNCLASSIFIED REPORT

Availability: Pub. in Proceedings, Oceans 1977, Annual Conference of Marine Tech. Soc. and IEEE, 18-19 Oct 77, p2C1-2C5 1977.

DESCRIPTORS: *Buoys, *Telemeter systems, *Oceanographic data, Coastal regions, Offshore, Underwater equipment, Temperature, Ocean currents, Telemetering antennas, Telemetering data, Telemetering receivers, Telemetering transmitters, Remote systems, Subsurface, Frequency shift keyers, Reprints (U)
IDENTIFIERS: WUNR388002 (U)

An inexpensive telemetry data buoy system has been developed. The telemetry link is made via an HF ground wave. Ten channels of data are collected from each of seven buoys and transmitted with 8-bit accuracy and quadruple redundancy once every 15 minutes in a frequency-shift-keyed format. The data are received and recorded on cassettes with a commercial grade recorder. Manual servicing of the recording system is required only once a day. (Author) (U)

AD-A049 077 17/1 20/1 8/10
NAVAL UNDERSEA CENTER SAN DIEGO CALIF

Surface-Duct Sonar Measurements (SUDS I - 1972). (U)

DESCRIPTIVE NOTE: Research and development rept. Mar 71-Aug 76.
NOV 76 197P Anderson,E. R. ;
REPT. NO. NUC-TP-463
PROJ: F52552
TASK: SF52552602

UNCLASSIFIED REPORT

DESCRIPTORS: *Sonar signals, *Ducts, *Ocean surface, *Underwater acoustics, Oceanographic data, Temperature, Acoustic velocity (U)
IDENTIFIERS: SUDS(Surface-Duct Sonar), Surface-duct sonar, PE62759N, WU19344 (U)

Specifically, the SUDS I experiments were designed to measure near-surface continuous wave (CW) pulse propagation losses and propagation losses for explosive sources out to ranges of 45 kyd and to obtain detailed supporting environmental measurements in three deep-water areas off the west coast of southern California. This report contains a brief historical background of near-surface propagation loss measurements, a summary of the experimental plan designed to accomplish the SUDS I objectives, and an analysis and discussion of the environmental and propagation loss measurements. Included, for selected propagation loss runs, are comparisons of the measured propagation losses with theoretical propagation losses computed using inputs derived from the environmental measurements. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A049 026 8/3 8/10
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Current Meter Data Report for the Eastern Part of the Caribbean Sea. (U)

DESCRIPTIVE NOTE: Technical note 1967-1972, AUG 75 186P Burns,D. A. ;Car,M. ;
REPT. NO. NOO-TN-6110-6-75

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Caribbean Sea, *Tables(Data), Velocity, Seasonal variations, Lesser Antilles, Oceanographic data, Density, Diurnal variations, Wind (U)
IDENTIFIERS: *Current meters, *Current meters(Oceanographic) (U)

Preliminary analysis of 36 current meter records from 18 arrays in the eastern Caribbean Sea for all four seasons and depths from 95 to 1910 meters show mean speed varying from less than 1cm/sec to 90cm/sec. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A049 025 8/3 8/10
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Gulf Stream Eddies in the Western North Atlantic. (U)

DESCRIPTIVE NOTE: Technical note Nov 69-May 73, NOV 73 48P Gotthardt,G. A. ;
REPT. NO. NOO-TN-6150-16-73

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Gulf stream, Isotherms, North Atlantic Ocean, Temperature gradients, Mapping, Tables(Data), Velocity, Boundary layer, Surfaces, Seasonal variations, Diurnal variations, Charts (U)
IDENTIFIERS: *Ocean eddies, Cyclonic ocean eddies, Anticyclonic ocean eddies (U)

The results of 60 thermal structure studies of the Gulf Stream system from Cape Hatteras to 60 W between November 1969 and May 1973 are described. During this period sixteen Gulf Stream eddies were studied for periods of up to 8 months. The data indicated that both cyclonic and anticyclonic Gulf Stream eddies are an integral part of the thermal structure of the area, forming eastward of 70 W from unstable Gulf Stream meanders. Eddy sizes increase with eastward formation and once separated from the Gulf Stream maintain thermal and velocity structure efficiently. Cyclonic eddies were observed to translate either westward in a spiraling path or on a more direct path to the southwest. Westward moving eddies coalesced with the Gulf Stream within five months. Cyclonic eddies not influenced by the Gulf Stream slowly subsided in Sargasso Water losing surface identity and drifting out of the survey area. Anticyclonic eddies translate westward along the seaward edge of the Continental Slope. (U)

AD-A049 024 8/3 8/10
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Oceanographic Observations of the Subarctic-Subtropical Transition Zone in the Western North Pacific. (U)

DESCRIPTIVE NOTE: Technical note Feb-Apr 76,
SEP 76 37P Senior,Charles W. ;
REPT. NO. NOO-TN-3440-6-76

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *North Pacific Ocean, Bathythermograph data, Subarctic regions, Subtropical regions, Temperature gradients, Temperature, Salinity, Isotherms, Mapping, Underwater sound signals, Velocity, Sonar signals, Ray tracing, Acoustic properties, Transitions (U)
IDENTIFIERS: *Ocean fronts, *Fronts(Oceanic) (U)

During the periods 6 February to 27 February 1976 and 5 April to 25 April 1976 the U.S. Naval Oceanographic Office (NAVOCEANO) survey vessel USNS SILAS BENT conducted oceanographic/geophysical surveys in the western North Pacific. Objectives of the surveys (Cruises 343613 and 343615) were to determine the oceanographic structure across the subarctic-subtropical transition zone and delineate the fronts marking the boundaries of the zone. A Bissett-Berman model 9040 SVSTD was used to obtain depth profiles of temperature, salinity, and sound velocity at each station. Expendable bathythermographs were used to determine the temperature structure between stations. The well-defined transition zone between the Subarctic Water Mass and the Central (subtropical) Water Mass is one of the more dominant oceanographic features of the North Pacific. The boundaries of the zone are marked by large temperature and salinity gradients which profoundly effect long-range sound transmission. (U)

AD-A049 023 8/3 8/10
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

A Summary of Current Observations between Iceland and Norway. (U)

DESCRIPTIVE NOTE: Technical note,
MAY 75 36P Dorey,Stephen W. ;
REPT. NO. NOO-TN-6120-01-75

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Oceanographic data, *Tables(Data), Bathymetry, Velocity, Seasonal variations, Norway, Iceland, Deep water, Ocean bottom topography, North Atlantic Ocean, North Sea (U)
IDENTIFIERS: Norwegian current, Icelandic Arctic Current (U)

This report is a summary of direct current measurements between Iceland and Norway. The data presented were obtained from tables of observations in the Faeroe-Shetland Channel, the southern Norwegian Sea and the northern North Sea published by Mosby in 1962 and 1963, from a report of the 1960 International Iceland-Faeroe Ridge Expedition current observations by Joseph in 1967, and from three arrays implanted on the Iceland-Faeroe Ridge by the U.S. Naval Ordnance Laboratory (NOL) in 1972. An attempt is made to follow the major currents through the region. (U)

AD-A049 022 8/3
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Aerial Observations of Oceanic Fronts in the Western Mediterranean Sea. (U)

DESCRIPTIVE NOTE: Technical note,
JUL 77 45P Cheney,Robert E. ;
REPT. NO. NOO-TN-3700-69-77

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Mediterranean Sea, Bathythermograph data, Temperature, Temperature gradients, Underwater sound, Acoustic properties, Sonar signals, Infrared images, Ionian Sea, Gibraltar Strait, Temperature inversion (U)
IDENTIFIERS: *Ocean fronts, *Fronts(Ocean), Alboran Sea, Most Project-2 (U)

The distribution and physical characteristics of ocean fronts in the western Mediterranean and Gulf of Cadiz were studied from 370 temperature profiles taken by airborne expendable bathythermographs from 30 April to 19 May 1976. Acoustic regimes were defined from sonic layer depth and sound channel depth. (Author) (U)

AD-A048 815 8/3 8/7
HAWAII INST OF GEOPHYSICS HONOLULU

Sediment Core Descriptions: R/V Kana Keoki 1973 North Central Pacific Cruise, 1974 Southeastern Pacific Cruise, and a 1974 Mid-Atlantic Ridge IPOD Site-Survey, (U)

SEP 77 132P Theyer,Fritz ;Mato,Chris ;
REPT. NO. HIG-77-9, HIG-DATA-33
CONTRACT: N00014-75-C-0209, N00014-70-A-0016-0001

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Also available under contract no. NSF-C482.

DESCRIPTORS: *Ocean bottom sampling, *Core sampling, *Marine geology, Lithology, Sediments, Clay, Oceanographic data, Oceanographic ships, Pacific Ocean, Atlantic Ocean, Ocean ridges (U)
IDENTIFIERS: Diatomaceous earth, Calcareous ooze, Calcareous sediments, Mid Atlantic ridge (U)

This report presents generalized descriptions of deep-sea sediment cores collected by personnel of the Hawaii Institute of Geophysics (HIG) during the R/V Kana Keoki's cruise of 1973 in the North Central Pacific, the 1974 cruise in the Southeastern Pacific, and a 1974 IPOD-Site Survey conducted in the Mid-Atlantic Ridge area. These initial descriptions, in addition to those presented by Andrews et al. (1970, 1973, 1975, 1976) for the Solomon Islands 1968-1969 cruises, Murray Fracture Zone and Western Pacific 1970 cruises, and Eastern and Western Pacific 1971 and 1972 cruises, serve as a guide to samples available through the Sediment Core Analysis Laboratory of the Hawaii Institute of Geophysics. (U)

AD-A048 775 8/2 8/10
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Current Meter Data Report for Mona Passage. (U)

DESCRIPTIVE NOTE: Technical note,
APR 77 42P Bourkland,M. ;Dorey,S. ;
REPT. NO. NOO-TN-3431-01-77

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Bathythermograph data, *Acoustic signals, Velocity, Temperature, Salinity, Caribbean Sea, Atlantic Ocean, Tables(Data), Deep water, Depth (U)

This report summarizes current measurements made in Mona Passage in 1975. Bathymetry, sound velocity-salinity-temperature-density profiles, and mean and maximum current velocity vectors at two sample levels are given. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A048 733 8/3 8/10
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Distribution and Classification of Ocean Fronts. (U)

DESCRIPTIVE NOTE: Technical note,
AUG 76 24P Cheney,Robert E. ;Winfrey, D. E. ;

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceans, *Acoustic properties, *Ocean currents, Variations, Temperature, Salinity, Atlantic Ocean, Gulf Stream, Sargasso Sea, Seasonal variations, Sound transmission, Underwater sound, Temperature gradients, Air water interactions (U)
IDENTIFIERS: *Ocean fronts, *Fronts(Oceanographic), Most Project-2 (U)

Locations and acoustic significance of many fronts (water mass boundaries) are classified as strong, moderate and weak. The characteristics of the Gulf Stream Front, the Slope Front and the Sargasso Sea Front are described. (Author) (U)

AD-A048 731 8/11 8/3
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Synoptic Observations of the Oceanic Frontal System East of Japan. (U)

DESCRIPTIVE NOTE: Technical note,
FEB 77 39P Cheney,Robert E. ;
REPT. NO. NOO-TN-3700-61-77

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Temperature gradients, *Oceans, Sonar signals, Japan, Pacific Ocean, Airborne, Infrared images, Surface temperature, Infrared reconnaissance, Scientific satellites, Cold fronts (U)
IDENTIFIERS: *Ocean fronts, *Fronts(Oceanographic) (U)

Seven flights were made east of Japan in October 1976. The Kuroshio and Oyashio fronts and nine eddies generated by them were studied from continuous measurements of surface temperature by airborne radiation thermometer. AXBT's, XBT's and STD's provided subsurface temperature profiles. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A048 730 8/11 17/1
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Variability of Oceanographic Conditions at Ocean Weather Stations in the North Atlantic and North Pacific Oceans. (U)

DESCRIPTIVE NOTE: Technical note,
JUN 77 89P Beatty,William H. , III;
REPT. NO. NOO-TN-3700-67-77

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Weather stations, *Variations, *Underwater sound signals, Atlantic Ocean, Pacific Ocean, Temperature, Salinity, Acoustic properties, Seasonal variations, Diurnal variations, Tables(Data), Deep water, Shallow water, Internal waves, Surface waves, Wind (U)

Seasonal mean salinity, temperature, and sound velocity and their variability were determined for 12 ocean weather stations. Variability above 200m depths is caused by wind-induced mixing and upwelling, advection and radiational heating and cooling. Below 200m internal waves and ocean fronts cause the variability. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A048 727 8/3
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Results of Current Observations - Wilkes Norwegian Sea Operations (Arrays 1 and 2). (U)

DESCRIPTIVE NOTE: Technical note, Jul-Sep 74,
75 44P Smith,Otis R. ;
REPT. NO. NOO-TN-6110-2-75-Suppl-1

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Norwegian Sea, Measuring instruments, Digital recording systems, Arrays, Stroboscopes, Oceanographic data, Sampling, Oceanographic equipment, Oceanographic ships, Emplacement, Ocean bottom, Recovery, underwater cameras, Data reduction, Time intervals, Velocity, Vector analysis (U)
IDENTIFIERS: AGS 33 vessel (U)

This report gives current data collected at two locations in the southern Norwegian Sea July through September 1974. Data are reported in cumulative speed distribution graphs and graphs of vector averages. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A048 726 8/3
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Results of Current Observations - Wilkes Norwegian Sea Operations (Arrays 3 and 4). (U)

DESCRIPTIVE NOTE: Technical note, Jul-Sep 74,
JAN 75 39P Smith,Otis R. ;
REPT. NO. NOO-TN-6110-2-75

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also supplement AD-A048 727.

DESCRIPTORS: *Ocean currents, *Norwegian Sea, Measuring instruments, Digital recording systems, Arrays, Stroboscopes, Oceanographic data, Sampling, Oceanographic equipment, Oceanographic ships, Emplacement, Recovery, Underwater cameras, Data reduction, Time intervals, Velocity, Vector analysis (U)
IDENTIFIERS: AGS 33 vessel (U)

This report gives current data collected at two locations in the Norwegian Sea during July through September 1974. Data are reported in cumulative speed distribution graphs and graphs of vector averages. (U)

AD-A048 724 8/10 8/13 8/11
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Initial Cruise Report, ATLANTIS II-94, Leg 1. (U)

DESCRIPTIVE NOTE: Technical rept.,
DEC 77 61P Johnson,David A. ;Shor, Alexander N. ;
REPT. NO. WHOI-77-70
CONTRACT: N00014-74-C-0262, NSF-OCE-76-81491

UNCLASSIFIED REPORT

DESCRIPTORS: *Seismic reflection, *Oceanographic data, *Sediment transport, *Turbidity currents, Acoustic waves, Ocean bottom topography, Geology, Structural geology, Sedimentation, Underwater photography, Submarine canyons, Iceland, Core sampling, Ocean ridges, Ocean bottom sampling, Continental slopes (U)
IDENTIFIERS: Iceland Basin, WUNR083004 (U)

During Leg 1 of cruise ATLANTIS II-94, a multidisciplinary investigation of present-day sediment-current interactions was carried out on the insular rise south of Iceland. The principal objective was to study the relationships between relatively steady thermohaline flow, episodic turbidity current flow, and the types of sediments associated with these current systems. The northern Iceland Basin is an optimal site for studying these effects because of the well-developed deep thermohaline current system resulting from overflow from the Norwegian Sea, and the substantial imput of terrigenous (Largely volcanogenic) debris from the Iceland margin which has occurred since the post-glacial rise in sea level. In this report, we outline the regional setting, objectives, and scientific operations of the cruise, and present examples of typical seismic profiles and 3.5 kHz records from areas of particular importance. All station locations are tabulated, and satellite fixes are listed. (U)

AD-A048 690 8/12 20/1 17/7
DEVELOPMENT AND RESOURCES TRANSPORTATION CO SILVER SPRING MD

Arctic Under-Ice Roughness. (U)

DESCRIPTIVE NOTE: Technical rept. 2 Apr 76-15 Nov 77,
DEC 77 19P LeSchack,Leonard A. ;
Chang,David C. ;
CONTRACT: N00014-76-C-0757

UNCLASSIFIED REPORT

DESCRIPTORS: *Sea ice, *Arctic Ocean, *Underwater acoustics, *Underwater navigation, Roughness, Submarines, Sonar signals, Thickness, Sonar transducers, Shallow depth, Seasonal variations (U)
IDENTIFIERS: Under ice roughness, WUNR307374, Most Project-2 (U)

Under-ice profile records obtained in the Arctic Ocean during the winter 1960 cruise of the USS SARGO and the 1960 and 1962 summer cruises of the USS SEADRAGON have been digitized and the Root-Mean-Square (RMS) depths have been computed (The RMS ice depth is a valuable parameter for Arctic acoustic studies as well as a good indicator of under-ice roughness). Thirteen representative profile segments varying in length from 50-250 miles and taken from the three cruises have been statistically analyzed. This analysis suggests that during the 1960-62 period under-ice roughness varies from place to place during the same period but at a given location does not vary over time. Histograms of ice depths observed across the Arctic Ocean during the above three cruises have been plotted. From these plots it is observed that there is, for this period, 15% open water in the summer and 2% during the winter. Additionally, it is noted that the amount of ice found in each thickness class varies only a few percent between winter and the following summers. (Author) (U)

AD-A048 581 8/10 4/2
OREGON STATE UNIV CORVALLIS SCHOOL OF OCEANOGRAPHY

Mixed Layer Observations during the NORPAX POLE Experiment. (U)

DESCRIPTIVE NOTE: Data rept., AUG 77 172P Simpson,James J. ;Paulson, Clayton A. ;
REPT. NO. DATA-66, REF-77-5
CONTRACT: N00014-67-A-0369-0007, N00014-67-A-0369-0012

UNCLASSIFIED REPORT
Availability: Microfiche copies only.

DESCRIPTORS: *Sea water, *Solar radiation, *Oceanographic data, *Thermoclines, North Pacific ocean, Subtropical regions, Temperature, Salinity, Density, Mixing, Ocean surface, Surface temperature, Long wavelengths, Heat flux, Latent heat, Meteorological data, Diurnal variations, Hydrography, Profiles, Vertical orientation, Research ships, Oceanographic ships, Drift, Open water (U)
IDENTIFIERS: NORPAX(North Pacific Experiment), North Pacific Experiment, Mixed layers(Marine), FLIP oceanographic vessel, WUNR083102 (U)

This report contains observations made from R/P FLIP as part of the first process-oriented NORPAX (North Pacific Experiment) experiment. The experiment was named 'POLE' to indicate that the horizontal extent of sampling was small compared to the largest scale investigated in NORPAX. The part of the experiment reported here was conducted during the period 28 Jan through 14 Feb 74. During this time, FLIP occupied a station approximately 800 miles north of the Hawaiian Island Chain (35 deg N. lat, 155 W. long) under free drift conditions. Direct measurements of the incident solar, reflected solar, net all-wave and net long-wave fluxes were made from R/P FLIP 2-14 Feb 74. The sea surface temperature was also observed with a radiation thermometer. Standard meteorological observations, from which the latent and sensible heat fluxes from the sea surface to the atmosphere were derived, also were made during this period. (U)

AD-A048 492 8/10 17/1
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Acoustic Oceanography, (U)

77 6P Munk,Walter H. ;Williams, Gordon O. ;
CONTRACT: N00014-75-C-0155

UNCLASSIFIED REPORT
Availability: Pub. in Nature, v267 n5614 p774-778, 30 Jun 77.

DESCRIPTORS: *Acoustics, *Oceanography, Ocean bottom topography, Seamounts, Depth, Shallow water, Deep water, Distance measuring equipment, Range(Distance), Acoustic waves, Reprints (U)

Measurements of ocean finestructure (with typical time scales of 15 min to 1 d, spacial scales of 10 to 100 m vertically and 1 to 10 km horizontally) are consistent with the measured variability in the transmission of acoustic signals through the ocean volume. The observations suggest that the statistics of acoustic fluctuations can be used to monitor the statistics of ocean finestructure. Further, fluctuations in the travel time are a measure largely of temperature fluctuations along the acoustic path, and the difference in reciprocal travel times is a measure of the component, along the path, of current and current shear. Such acoustic measurements give integrals along the paths, with the attendant advantages and disadvantages as compared with the traditional 'spot' measurements; precision promises to be comparable or better. (Author) (U)

AD-A048 487 8/7
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Passive Ocean Margins, (U)

75 5P Curray,Joseph R. ;
CONTRACT: N00014-75-C-0152

UNCLASSIFIED REPORT
Availability: Pub. in Geotimes, p26-28 1975.

DESCRIPTORS: *Drilling, *Ocean bottom, *Geology, Oceanography, North Atlantic Ocean, Earthquakes, Volcanic activity, Geophysics, Seismology, Reprints (U)

The International Phase of Ocean Drilling began operations in early December, as a continuation of JOIDES's Deep Sea Drilling Project. The JOIDES organization has been expanded for this international program with the addition of members from several foreign and U.S. oceanographic institutions and universities. The program will be directed toward 4 principal objectives, each represented by an advisory panel: Ocean Crust, Ocean Paleoenvironment, Active Ocean Margins, and Passive Ocean Margins. (Author) (U)

AD-A048 088 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Equatorial Undercurrents. (U)

DESCRIPTIVE NOTE: Technical rept.,
AUG 76 8P Luyten,James R. ;Swallow, J. C. ;
REPT. NO. WHOI-77-37, WHOI-CONTRIB-3805
CONTRACT: N00014-76-C-0197, NSF-ATM-76-02196

UNCLASSIFIED REPORT
Availability: Pub. in Deep-Sea Research, v23 p1005-1007 1976.

DESCRIPTORS: *Ocean currents, *Equatorial regions, *Indian Ocean, Vertical orientation, Velocity, Underwater acoustics, Underwater vehicles, Oceanographic data, Monsoons, Ocean waves, Water flow (U)
IDENTIFIERS: Indian Ocean experiment, INDEX(Indian Ocean experiment), WUNR083400 (U)

New observations in the Western Indian Ocean show the predominance of energetic small-scale vertical variability over long periods of time. These jet-like structures persist at great depths. (Author) (U)

AD-A048 086 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

The Influence of Deep Mesoscale Eddies on Sea Surface Temperature in the North Atlantic Subtropical Convergence. (U)

DESCRIPTIVE NOTE: Technical rept., FEB 76 13P Voorhis,Arthur D. ; Schroeder,Elizabeth H. ;
REPT. NO. WHOI-77-27, WHOI-CONTRIB-3709
CONTRACT: N00014-74-C-0262

UNCLASSIFIED REPORT

Availability: Pub. in Jnl. of Physical Oceanography, v6 n6 p953-961 Nov 76.

DESCRIPTORS: *Ocean surface, *Surface temperature, *Ocean currents, Tropical regions, Seasonal variations, Climate, Surface waters, Temperature gradients, Thermoclines, Maps, Oceanographic data (U)
IDENTIFIERS: Baroclines, Eddy surface currents, WUNR083004 (U)

Maps of sea surface temperature in the North Atlantic subtropical convergence during the 1973 MODE field experiment (and recent satellite imagery) show large meridional and zonal features on a scale of 40-400 km which are superimposed on the seasonal meridional temperature gradient. After comparing these maps with dynamic topographic relative to 1500 db it is argued that these features are mainly due to advective distortion by surface currents associated with the deep baroclinic mesoscale eddy field. Wind-induced surface currents appear to have a lesser effect in generating such structure. Surface frontogenesis observed during MODE and by earlier workers in the area suggests that jet-like shallow surface density currents may be also significant in advecting and distorting the surface temperature field on scales of 10 km and less. Finally, rough calculations indicate that these advective processes of the sea surface may supply annually an amount of heat to the surface water mass of the northern Sargasso Sea which is significant compared with that lost to the atmosphere. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A047 683 20/1 8/3
STANFORD RESEARCH INST MENLO PARK CALIF

Scattering of Sound by Internal Waves: The Role of Particle Velocities. (U)

DESCRIPTIVE NOTE: Technical rept., NOV 77 38P Munk ,W. H. ;Zachariasen, F. ;
REPT. NO. SRI-JSR-77-21
CONTRACT: DAHC15-73-c-0370, ARPA Order-2504

UNCLASSIFIED REPORT

DESCRIPTORS: *Acoustics, *Sound transmission, *Internal waves, *Ocean waves, Analysis of variance, Horizontal orientation, Signal processing, Mathematical models, Sound waves, Velocity, Differential equations, Ocean environments, Acoustic velocity, Underwater sound, Acoustic scattering (U)

Internal waves scatter sound by two related perturbations: (1) those associated with vertical particle displacements zeta (x, y, z, t) in the presence of a vertical gradient of (potential) sound speed: delta times c = zeta. gamma sub z c sub p; (2) those associated with horizontal particle velocities u(x, y, z, t). The combined perturbations in refractive index are delta times c/c + u/c. The second term, which has been generally neglected, does become important under two rather special circumstances: (a) in sound transmission along a deep downward loop, and (b) in the difference between transmission from a source at point A to a receiver at point B and transmission from a source at b to a receiver at A. (Author) (U)

AD-A047 655 13/10 8/10
RHODE ISLAND UNIV KINGSTON GRADUATE SCHOOL OF OCEANOGRAPHY

R/V TRIDENT Cruise Summaries CY 1962 through CY 1971. (U)

DESCRIPTIVE NOTE: Technical rept., NOV 77 248P Williams,Edwin McB. ;
REPT. NO. URI/GSO-Ref-77-4
CONTRACT: N00014-76-C-0226

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-A026 351.

DESCRIPTORS: *Oceanographic ships, *Oceanography, Mission profiles, Reviews, Research ships, Crews, Atlantic Ocean, South America, Africa, Sampling, Scientists, History, Oceanographers, Students, Seismic data (U)
IDENTIFIERS: TRIDENT Vessel, WUNR083165 (U)

This report was prepared by the Data Archives group at GSO/URI. It is a summary of the operations of the research vessel R/V TRIDENT for CY 1962 through CY1971. For each calender year a listing of cruises is given followed by an index chart. Cruises have been summarized by: cruise number, dates, days at sea, funding, and general area of operation. A program description and data collected are itemized. Participants and their affiliation on each cruise are listed. A cruise chart follows each cruise summary. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A047 621 8/10 8/12 4/2 8/1
NATIONAL RESEARCH COUNCIL WASHINGTON DC POLAR RESEARCH BOARD

Scientific Plan for the Proposed Nansen Drift Station, (U)

76 256P Untersteiner,Norbert ;Aagaard, Knut ;Alexander,Vera ;Anderson,John ;Barnett, Donald ;
CONTRACT: N00014-75-C-1162

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Includes envelope with map.

DESCRIPTORS: *Arctic Ocean, *Icebreakers, *Sea ice, Scientific research, International, Research management, Oceanographic ships, Logistics support, Pack ice, Drift, Marine geology, Marine geophysics, Tectonics, Marine climatology, Marine biology, Underwater sound, Marine atmospheres, Magnetosphere, Remote detectors (U)
IDENTIFIERS: Nansen Drift Station, Ocean basins, Paleoclimatology, Ice cover (U)

While field stations on drifting pack ice will remain useful for special purposes, recent scientific and technological developments have fostered the idea to use or, reuse with modern means, the icebreaker supported by aircraft as a research platform. The project, entitled the 'Nansen Drift Station' (NDS) is described in this report. The scientific program is planned to include: Marine Geophysics and Tectonics; Marine Geology and Paleoclimatology; Physical Oceanography; Biology and Biochemistry; Marine Acoustics; Heat and Mass Balance of the Ice Cover; Troposphere; Ice Physics and Engineering; Atmosphere-Ionosphere-Magnetosphere; and Remote Sensing. (U)

AD-A047 458 8/10 8/3
FLORIDA STATE UNIV TALLAHASSEE DEPT OF OCEANOGRAPHY

On the Importance of Stable Stratification to the Structure of the Bottom Boundary Layer on the Western Florida Shelf. (U)

DESCRIPTIVE NOTE: Published paper,
77 22P Weatherly,Georges L. ;Van Leer,John C. ;
REPT. NO. 152
CONTRACT: N00014-75-C-0201, NSF-GA-34009

UNCLASSIFIED REPORT
Availability: Pub. in Bottom Turbulence, Elsevier Oceanography Series, 19 p103-122 1977.

DESCRIPTORS: *Ocean bottom, *Ocean currents, *Boundary layer, Upwelling, Turbulence, Continental shelves, Florida, Summer, Sea water, stratification, Temperature, Turbulent boundary layer, Reprints (U)
IDENTIFIERS: Ekman veering, Ekman layers, Downwelling, WUNR083231 (U)

This is a preliminary report of bottom boundary layer (BBL) observations made with a cyclosonde on a continental shelf in the summer when the water is relatively stably stratified. Vertical profiles of temperature, current direction and and speed show persistent and large temperature changes (1.5 -4.0 C), large direction changes (30 - 70 deg) during periods of long-isobath flow and a low speed jet in the lowest 6-11 m above the bottom. The BBL is interpreted to be a turbulent Ekman layer of depth ranging from 6-11 m in which stable stratification is very important in determining its depth, Ekman veering and speed profile. The temperature in the BBL is seen to change with time at a faster rate than outside the BBL. This is explained by upwelling (downwelling) of colder (warmer) water in the BBL due to Ekman veering in the boundary layer. Such upwelling (downwelling) is expected when the isopynals are nonparallel to the bottom and the geostrophic current above the boundary layer is aligned predominantly along isobaths with deep water to the right (left). (Author) (U)

AD-A047 096 8/3
TEXAS A AND M UNIV COLLEGE STATION DEPT OF OCEANOGRAPHY

Gulf Oceanography-Gulf Stream Study (GUSS). (U)

DESCRIPTIVE NOTE: Final rept. 1 Jan 76-31 May 77,
SEP 77 126P Kirwan,A. D. , Jr;
REPT. NO. TAMU-REF-77-3-F
CONTRACT: N00014-75-C-0537

UNCLASSIFIED REPORT

DESCRIPTORS: *Gulf Stream, *Ocean currents, Dynamics, Drift, Position finding, Position(Location), Meteorological satellites, Buoys, Telemeter systems, Data links, Loran, Measurement, Trajectories, Velocity, Acceleration, Lagrangian functions (U)
IDENTIFIERS: Loran C, Tiros N satellite, Differential kinematic properties, Reynolds stresses, Gulf stream kinematics (U)

This is the final report of a feasibility study of a western boundary current experiment which would use free drifting, drogued buoys (drifters). A pilot experiment in the Kuroshio demonstrated that drifters stay in the strong current region long enough to determine all of the required kinematic parameters. In these regions a theoretical error analysis showed that positions should be determined approximately hourly with an accuracy to within 450 meters. In an investigation of possible position fixing systems that could meet this requirement, it was concluded that the LORAN-C system with a telemetry link through TIROS N satellite was the most economical approach. (Author) (U)

AD-A047 093 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Observations of Interaction between the Internal Wavefield and Low Frequency Flows in the North Atlantic. (U)

DESCRIPTIVE NOTE: Technical rept.,
NOV 77 340P Ruddick,Barry Raymond ;
REPT. NO. WHOI-77-68
CONTRACT: N00014-76-C-0197

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Doctoral thesis.

DESCRIPTORS: *Internal waves, *Ocean waves, Oceanographic data, North Atlantic Ocean, Interactions, Waveforms, Wave equations, Fluid flow, Shear properties, Error analysis, Eddy currents, Viscosity, Measuring instruments, Mooring, Computations, Deep oceans, Partial differential equations (U)
IDENTIFIERS: Shear flow, WUNR083400 (U)

A total of four moorings from POLYMODE Array I and II were analyzed in an investigation of internal wavefield-mean flow interactions. In particular, evidence for wave-mean flow interaction was sought by searching for time correlations between the wavefield vertically-acting Reynolds stress (estimated using the temperature and velocity records), and the mean shear. Theoretical computations indicate that the wavefield basic state may not be independent of the mean flow as assumed, but can actually be modified by large-scale vertical shear and still remain in equilibrium. In that case, the wavefield does not exchange momentum with a large-scale vertical shear flow, and, excepting critical layer effects, a small vertical eddy viscosity is to be expected. Using the Garrett-Munk (1975) model internal wave spectrum, estimates were made of the maximum momentum flux (stress) expected to be lost to critical layer absorption. Stress was found to increase almost linearly with the velocity difference across the shear zone, corresponding to a vertical eddy viscosity of ~100 sq cm/sec. Stresses indicative of this effect were not observed in the data. (U)

AD-A046 900 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Secular Variability in the Baroclinic Structure of the Interior North Pacific from 1950-1970, (U)

JUN 76 25P White,Warren B. ;
CONTRACT: N00014-69-A-0200-6043

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Marine Research, v35 n3 p587-607 Aug 77.

DESCRIPTORS: *Hydrostatic pressure, *North Pacific Ocean, *Oceanographic data, Variations, Ocean currents, Reprints, Potential energy (U)
IDENTIFIERS: *Baroclinicity, Subtropical gyre (U)

Recently White (1975) found significant year to year changes in the baroclinic transport of the Subtropical Gyre in the North Pacific. To determine the spatial variability in the general circulation associated with this change in bulk transport, the baroclinic potential energy (BPE) in the mid-latitude interior from 20-50N, 145E-130W is mapped (using the methods of optimum interpolation) onto a regular 5 degree latitude/10 degree longitude grid each year from 1950-1970. Subsequently empirical orthogonal function analysis yields two principal spatial patterns of BPE variability that account for nearly 70% of the total interannual variance. The first empirical pattern (accounting for 47% of the interannual variance) shows the intensities of the Subtropical and Subarctic Gyres in the western North Pacific to have fluctuated directly out of phase with one another, with a correlation time scale of approximately 3 years. This was because maximum variability in BPE lay in the transition region between these two gyre systems. The second empirical pattern (accounting for 20% of the interannual variance) shows the intensity of the Subtropical Gyre in the western North Pacific to have fluctuated with a correlatin time scale of approximately 1 1/2 years, with little change recorded in the Subarctic Gyre. This was because the variability maxima lay in the centers of the Subtropical Gyre in the western North Pacific. (U)

AD-A046 102 8/3 8/12
NAVAL INTELLIGENCE SUPPORT CENTER WASHINGTON D C TRANSLATION DIV

Free Internal Waves in Ice-Covered Seas (O Svobodynkh Vnutrennikh Volnakh v More, Pokrytom Idom), (U)

SEP 77 17P Smirnov,V. N. ;Savchenko, V. G. ;
REPT. NO. NISC Trans-3965

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. of Arkticheskiy i Antarkticheskiy Nanchno-iss Ledovatelskiy (USSR) v306 p108-122 1972.

DESCRIPTORS: *Ocean waves, *Internal waves, Gravity waves, Sea ice, Pack ice, Tiltmeters, Oscillation, Equations of motion, Kinematics, Translations, USSR, Surface waves, Arctic Ocean (U)

The results of full-scale observations and theoretical calculations provide a basis to assume that two classes of free oscillations can simultaneously appear in a heterogeneous sea in the presence of an ice cover: internal ones and surface elastic gravity waves. In this case the internal waves cause oscillations of the ice cover which can be recorded using the appropriate apparatus. (U)

AD-A045 974 8/10 8/1
TEXAS A AND M UNIV COLLEGE STATION DEPT OF OCEANOGRAPHY

Effects of Bioturbation on Sediment-Seawater Interaction, (U)

JUL 76 22P Schink,D. R. ;Guinasso,N. L. , Jr;
CONTRACT: N00014-75-C-0537

UNCLASSIFIED REPORT
Availability: Pub. in Marine Geology, 23 p133-154 1977.

DESCRIPTORS: *Ocean bottom soils, *Sedimentation, *Marine biology, Sea water, Deep oceans, Sediments, Interactions, Microbiota, Silicates, Dissolving, Interstitial, Perturbations, Boundary layer, Mathematical models, Chemical equilibrium, Balances, Balances, Chemical oceanography, Marine geophysics, Biomolecules, Reprints (U)

Large gradients of dissolved silica are common in the uppermost layers of abyssal marine sediments. These gradients can be sustained only by an active, continuous supply of dissolved silica from within the sediments. The flux of dissolved silica is approximately equivalent to the total accumulation rate of all siliceous material (including aluminosilicates) in the sediments; if aluminosilicates were the source of dissolved silica they would have to give up nearly all of their silicon. Since marine sediments commonly show no such depletion in silicon with depth, dissolution of aluminosilicates cannot be the primary source of dissolved silica emanating from the sea floor. The main source of this flux must be particulate biogenous silica that is mixed downward into the more inert sedimentary material and dissolves leaving little residue. Biological and physical processes stir deep-sea sediments at rates which can be described by vertical mixing coefficients. These coefficients can be evaluated from microtektite redistribution or from the depth profiles of plutonium in sediments. By redistributing reactive particles, this vertical mixing influences the chemical gradients in interstitial waters and the chemical fluxes across the sea-floor boundary. (U)

AD-A045 890 8/3 22/2
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

California Current Eddy Formation: Ship, Air, and Satellite Results. (U)

77 10P Bernstein,Robert L. ; Breaker,Larry ;Whritner,Robert ;
CONTRACT: N00014-75-C-0152, N00014-75-C-0260

UNCLASSIFIED REPORT
Availability: Pub. in Science, v195 p353-359, 28 Jan 77.
SUPPLEMENTARY NOTE: Supported in part by contract no. NSF-OCE-75-23361

DESCRIPTORS: *Ocean currents, *Eddy currents, Hydrographic surveying, Temperature, Salinity, Infrared scanning, Radiometers, Scientific satellites, Oceanographic ships, Oceanographic data, Offshore drilling, Oil spills, North Pacific Ocean, East Pacific Rise, Reprints (U)
IDENTIFIERS: *California current (U)

Interest in the structure and circulation of the California Current has increased recently. On practical grounds, the prospects of offshore oil drilling in the region and the attendant potential for oil spills make knowledge of this current important. On scientific grounds, oceanographic awareness of and interest in the dynamical significance of meandering and eddying processes in ocean current systems have increased substantially in recent years. The California Current is probably one of the best observed currents in the world. As a result, it is possible to determine its long-term mean state, and contrast it with more transient meanders and eddies embedded in the flow. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A045 883 20/1 8/10
INSTITUTE FOR ACOUSTICAL RESEARCH MIAMI FLA

Estimation and Interpretation of Acoustic CW Phase Fluctuation Spectra. (U)

DESCRIPTIVE NOTE: Technical rept., AUG 76 11P Adams,Stanley L. ;Jobst, William J. ;
REPT. NO. IAR-77003
CONTRACT: N00014-74-C-0229

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of the Acoustical Society of America, v61 n3 p675-681 Mar 77.

DESCRIPTORS: *Oceanography, *Underwater sound, *Acoustic measurement, Phase modulation, Wave propagation, Narrowband, Multipath transmission, Reprints (U)

A fundamental question exists regarding how well infromation about ocean processes can be extracted from a time series of cw acoustic phase and amplitude when the propagation channel consists of multiple acoustic paths. In this paper, it is shown that there are at least two multipath propagation conditions under which an acoustic cw propagation experiment can be used to measure properties of the sound-speed field and the ocean processes along the propagation path: narrow-band (frequency-modulation) path-length modulation of all paths, and wide-band (frequency-modulation) path-length modulation of a dominant path. A dominant path is one with power which exceeds the power on all other paths plus noise by at least 6 dB. Signal processing techniques for measuring the fluctuation spectra in both multipath situations are described and performance estimates are derived. The factors which limit how well information can be extracted are discussed. (Author) (U)

AD-A045 734 8/3
MASSACHUSETTS INST OF TECH CAMBRIDGE DEPT OF METEOROLOGY

Impingement of Internal Waves from Below onto a Moving Mixed Surface Layer. (U)

AUG 76 10P Mollo-Christensen,Erik ;
CONTRACT: N00014-75-C-0291

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Physical Oceanography, v7 n5 p684-690 Sep 77.

DESCRIPTORS: *Ocean waves, *Internal waves, *Ocean surface, *Oceanography, Instability, Ocean currents, Ocean tides, Ocean bottom topography, Thermoclines, Reprints (U)
IDENTIFIERS: Inertial frequency, Gate project (U)

Discussion of the generation of internal waves by tidal flow over bottom topography concludes that isobath convergence has an important effect on wave intensity near the sea surface, and also predicts that all harmonics of the tide will be present in the emitted waves. A simple analysis of the reflection of internal waves by a moving surface layer predicts that the surface layer disturbance will be amplified by, at the most, a factor of 2, and that this amplification is selective in wavenumber. For waves near inertial frequency, the impinging wave can excite disturbances that grow exponentially with time. Data from the GATE experiment show a clear tidal signal in isotherm depths near the thermocline and a possible inertial period variation as predicted by the simplified case analyzed. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A045 698 8/7 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Visual Observations of Contemporary Current Erosion and Tectonic Deformation on the Cocos Ridge Crest. (U)

DESCRIPTIVE NOTE: Journal article,
JUL 76 26P Heezen,Bruce C. ;Rawson, Michael ;
REPT. NO. LDGO-2421
CONTRACT: N00014-76-C-0264

UNCLASSIFIED REPORT
Availability: Pub. in Marine Geology, v23 p173-196 1977.

DESCRIPTORS: *Ocean ridges, *Tectonics, *Marine geology, Ocean bottom topography, Seamounts, Erosion, Ocean currents, Panama, Pacific Ocean, Tidal currents, Sediment transport, Reprints (U)
IDENTIFIERS: *Cocos Ridge, Panama Gulf, WUNR083142 (U)

Currents have eroded channels into the stratified conformable post-Miocene marls and chalks which mantle the Cocos Ridge. At topographically constricted sills, tidal motions superimposed on circulation locally results in flow velocities exceeding the minimum required for erosion and traction transport of foraminiferal ooze creating channels and moats. Direct visual observations from a submersible indicate that the erosion process is in operation at the present time. Due to the local increase in the velocity of moving ocean water masses resulting from obstruction by seamounts, sediment has not been and at present is not being deposited on the flanks of the post-Miocene seamounts which rise from the crest and flanks of the Cocos Ridge. Such sediment joins that eroded from the moats and connecting channels and is presumably deposited along with those other components at the ends of the channels on the flanks of the Cocos Ridge. Tectonic effects related to the subduction of the Cocos Ridge beneath Central America can be observed more than one hundred kilometers seaward of the subduction zone.

(U)

AD-A045 696 4/2 20/6 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Estimation of the Refractive-Index Temperature Structure Parameter over the Ocean. (U)

DEC 75 9P Friehe,Carl A. ;
CONTRACT: N00014-75-C-0152

UNCLASSIFIED REPORT
Availability: Pub. in Applied Optics, v16 n2 p334-340 Feb 77.

DESCRIPTORS: *Marine meteorology, *Oceans, *Refractive index, Wind, Atmospheric temperature, Air, Water, Interfaces, Reprints (U)

The semiempirical equation of Wyngaard, Izumi, and Collins is combined with the bulk aerodynamic formulas to provide equations for the estimation of (the refractive-index temperature structure parameter) in the atmospheric boundary layer above the sea. The equations relate the refractive-index temperature structure parameter to easily measured quantities of average wind speed and air-sea temperature and moisture differences. Comparison with limited refractive-index temperature structure parameter data obtained in the marine boundary layer suggests that the estimation equations are satisfactory. (U)

AD-A045 609 8/10
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Altitude Dependence of C sub T2 Over the Ocean. (U)

DESCRIPTIVE NOTE: Rept. for Sep 76-Jun 77,
OCT 77 32P Fairall,C. W. ;Markson , Ralph ;Sedlacek,Jan ;
REPT. NO. NPS-61Fr77101

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean surface, *Marine geophysics, Air water interactions, Temperature measuring instruments, Boundary layer, Altitude, Microstructure, Turbulent diffusion, Low altitude, Research aircraft, Marine meteorology, Fog, Air pollution (U)

The height dependence of the temperature structure parameter was measured with microthermal sensors mounted on a light aircraft. This work was done in conjunction with optical propagation and turbulent transport research in the marine boundary layer. These measurements indicate that, in the absence of a strong inversion, the constant stress layer can be surprisingly thin. The measurements also substantiate the strong role played by temperature and water vapor discontinuities in turbulence above the boundary layer. (Author) (U)

AD-A045 295 8/10
HAWAII INST OF GEOPHYSICS HONOLULU

Temperature-Salinity Curves in the Pacific and Their Application to Dynamic Height Computation. (U)

JAN 76 6P Emery,William J. ;Wert, Richard T. ;
REPT. NO. HIG-Contrib-761
CONTRACT: N00014-67-A-0387-0017, NSF-IDO-74-24583

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Physical Oceanography, v6 n4 p613-617 Jul 76.

DESCRIPTORS: *Oceanographic data, Salinity, Temperature gradients, Bathythermograph data, Pacific Ocean, Deep oceans, Hydrographic surveying, Vertical orientation, Reprints (U)

Mean temperature-salinity (TS) curves are computed from all available hydrographic data for 10 deg quadrangles in the Pacific between 20 S and 40 N. These curves together with temperature profiles from hydrographic stations are used to compute a quanity called TS dynamic height. The rms differences between dynamic and TS dynamic height indicate where mean TS curves may be reliably used to compute dynamic height from temperature profiles. (Author) (U)

AD-A045 293 8/3
MASSACHUSETTS INST OF TECH CAMBRIDGE DEPT OF EARTH AND PLANETARY SCIENCES

Response of an Equatorial Ocean to a Periodic Monsoon, (U)

OCT 76 17P Wunsch,Carl ;
CONTRACT: N00014-75-C-0291, NSF-OCE-72-01384

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Physical Oceanography, v7 n4 p497-511 Jul 77.
SUPPLEMENTARY NOTE: Errata sheet inserted.

DESCRIPTORS: *Ocean currents, Indian Ocean, Equatorial regions, Deep oceans, Monsoons, Time dependence, Wind direction, Wind velocity, Periodic variations, Equations of motion, Reprints (U)
IDENTIFIERS: WUNR083157 (U)

An infinitely deep stratified ocean on an equatorial beta plane is forced with a periodic wind system. The resulting linearized motion is shown to result in a deep cellular flow structure in rough agreement with recent observations. Because of the infinite depth, the vertical structure is dependent only on the horizontal structure and frequency of the wind-forced layer. The motion is a mechanism for carrying momentum downward from the surface. A western boundary is easily accommodated. (Author) (U)

AD-A044 402 8/3 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

On the Characteristics and Circulation of the Southwestern Atlantic Ocean, (U)

MAY 76 33P Reid,Joseph L. ;Nowlin, Worth D. , Jr.;Patzert,William C. ;
CONTRACT: N00014-75-C-0152

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Physical Oceanography, v7 n1 p62-91 Jan 77.

DESCRIPTORS: *South Atlantic Ocean, *Ocean currents, Circulation, Oceanography, Thermoclines, Layers, North Atlantic Ocean, Reprints (U)
IDENTIFIERS: Circumpolar water (U)

The waters found within the southwestern Atlantic Ocean extend into it as separate layers with markedly different characteristics. Along the western boundary the deeper waters, derived from the North Atlantic, are warm, highly saline, oxygen-rich and nutrient-poor. This North Atlantic Deep Water (NADW) lies within the density range of the Circumpolar Water (CPW) from the south, which is cooler, lower in salinity, very low in oxygen and very high in nutrients. Where the NADW and CPW meet in the southwestern Atlantic, the NADW separates the CPW into two layers above and below the NADW - each less saline, richer in nutrients and lower in oxygen than the NADW. Above the upper branch of the CPW lies the Subantarctic Intermediate Water, which is lowest in salinity of all the layers. Beneath the lower branch of the CPW lies an abyssal layer derived from the mid-depths of the Weddell Sea. It is colder, less saline, lower in nutrients and higher in oxygen than the Circumpolar Water. These layers appear to be separated vertically by density gradients which tend to be sharper at the interface than in the layers themselves. These maxima in stability, which result from the interleaving of water masses from different sources, extend over hundreds of kilometers: apparently vertical exchange processes are not strong enough to dissipate them. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A044 111 8/3
FLORIDA STATE UNIV TALLAHASSEE

Upwelling in the Ocean: Two- and Three-Dimensional Models of Upper Ocean Dynamics and Variability, (U)

77 52P O'Brien,James J. ;Clancy, R. Michael ;Clarke,Allan J. ;Crepon,Michel ; Elsberry,Russell ;
REPT. NO. 156, Contrib-127
CONTRACT: N00014-75-C-0201

UNCLASSIFIED REPORT
Availability: Pub. in Modelling and Prediction of the Upper Layers of the Ocean, Ch11 p178-228 1977.

DESCRIPTORS: *Ocean surface, *Upwelling, *Ocean waves, Ocean models, Ocean bottom topography, Wind, Sea ice, Coasts, Mathematical models, Air water interactions, Sea breeze, Sea states, Edges, Stresses, Continental shelves, Variations, Wind shear, Reprints (U)

Several specific examples of two and three-dimensional models are reviewed. The strong influence of horizontal boundaries, bottom topography, and spatial and temporal variability of wind stress on the horizontal momentum distribution and vertical motion patterns are illustrated by specific examples of coastal as well as open ocean upwelling, baroclinic shelf-waves, ice edge upwelling, and ocean front formation. (Author) (U)

AD-A044 093 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Late Quaternary Sedimentation in the Western Equatorial Atlantic. (U)

DESCRIPTIVE NOTE: Journal article,
FEB 76 18P Damuth,John E. ;
REPT. NO. LDGO-2454
CONTRACT: N00014-75-C-0210

UNCLASSIFIED REPORT
Availability: Pub. in Geological Society of America Bull. v88 p695-710 May 77.

DESCRIPTORS: *Sediments, *Sedimentation, *Atlantic Ocean, *Basins(Geographic), Geology, Equatorial regions, Continental shelves, Lithology, Sediment transport, Reprints (U)
IDENTIFIERS: Amazon River, Orinoco River, Quiana Basin, Pleistocene epoch, Quaternary sedimentation, WUNR083142 (U)

The late Quaternary terrigenous sediments of the continental margin and abyssal plains of the western equatorial Atlantic consist predominantly of hemipelagic silty clay rich in organic detritus with interbeds of redeposited silts and sands; deposition was cyclic and was controlled by glacial-interglacial climatic fluctuations. The redeposited beds are graded, as much as several metres in thickness, and were episodically deposited by turbidity currents and related mass flows. Although the terrigenous component of the hemipelagic sediments was also transported to abyssal depths via gravity-controlled bottom flows, the pelagic component (foraminifera) of these sediments indicates that accumulation occurred relatively slowly 5 to 30 cm/100 yr and continuously for periods of as much as 100,000 yr. Thus some near-bottom process (other than simple downslope flow), such as redistribution and deposition by contour-following bottom currents, apparently was responsible for deposition of the hemipelagic sediments; however, evidence for such contour-current deposition is sparse. (U)

AD-A043 999 8/3 13/10.1 13/9 14/2
HAWAII INST OF GEOPHYSICS HONOLULU

Versatile Release Timer for Free Vehicle Instrumentation, (U)

APR 77 22P Nakamura,Alex I. ;Harvey, Robert R. ;
REPT. NO. HIG-Contrib-825
CONTRACT: N00014-75-C-0209
MONITOR: ERL PMEL-9

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanography, *Deep submergence vehicles, *Release mechanisms, *Timing devices, Explosive actuators, INstrumentation, Trigger circuits, Electronic equipment, Solid state electronics, Oscillators (U)

A deep ocean, release timer unit was designed to provide a trigger for various explosive and nonexplosive release mechanisms. Complete details for construction, testing and operation are provided. (Author) (U)

AD-A043 718 8/10 14/2 8/1
OREGON STATE UNIV CORVALLIS SCHOOL OF OCEANOGRAPHY

Exposure. Newsletter for Ocean Technologists. Volume 5. Number 3. (U)

DESCRIPTIVE NOTE: Technical rept.,
JUL 77 13P Mesecar,Roderick ;
CONTRACT: N00014-67-A-0369-0007

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 5, Number 2, AD-A040 586.

DESCRIPTORS: *Oceanographic equipment, *Oceanography, *Instrumentation, Towed bodies, Electric cables, Thermistors, Temperature measuring instruments, Plankton, Multiplexing, Multichannel, Analog to digital converters, Cable fairings, Modules(Electronics), Magnetic tape, Disk recording systems, Benthos (U)
IDENTIFIERS: WUNR083102 (U)

The following paper describes a shipboard/towed instrumentation cable for making vertical temperature structure measurements in a program that focuses on the dissipation of temperature fluctuations in the upper 100 meters of the ocean as a function of lateral range. The instrumented cable is implemented with 30 thermistors molded into fairing components and spaced at 1 meter intervals. The system has an accuracy of + or - 0.01 deg C and a resolution of 0.001 deg C over a range of 20 degrees Celsius. With a thermistor response less than 0.1 sec and a 5 Hz data rate, a tow speed of 8 knots is possible. All data management is accommodated by a PDP-11/40 shipboard computer. (Author) (U)

AD-A043 694 8/3
LOUISIANA STATE UNIV BATON ROUGE COASTAL STUDIES INST

Physical Processes in a Fore-Reef Shelf Environment. (U)

DESCRIPTIVE NOTE: Technical rept.,
DEC 77 12P Roberts,Harry H. ;Murray, Stephen P. ;Suhayda,Joseph N. ;
REPT. NO. TR-240
CONTRACT: N00014-75-C-0192

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Proceedings, International Coral Reef Symposium (3rd), May 77, Miami, FL.

DESCRIPTORS: *Ocean waves, *Ocean currents, *Coral reefs, Tides, Tidewater, Measurement, Ocean bottom, Turbulence, Attenuation, Friction, Roughness, Symposia (U)
IDENTIFIERS: Force reef shelf, Grand Cayman Island, WUNR388002 (U)

Wave and current measurements were made across a rough-bottomed fore-reef shelf along the south coast of Grand Cayman Island. Wave heights attenuated 20% and current speeds 30% from the shelf margin (approx 22-meter depth) to a depth of approximately 8 meters, a distance of approx 0.4 km. Strong, rectilinear tidal currents dominated the deep shelf margin, but weak, directionally variable currents were characteristic of the shallow shelf. Attenuation of wave heights and current speeds across the shelf is attributed to frictional effects resulting from strong interactions with the unique boundary conditions of the extremely rough bottom. A dye experiment illustrated that strong on-shelf flow is directed up the deep coral reef grooves at the shelf margin. Wave force-dominated versus current force-dominated portions of the fore-reef shelf were defined from in situ measurements. Variations in organic communities, growth forms, and reef structure are consistent with these zones. (U)

AD-A043 693 8/3 9/2 17/7
OFFICE OF NAVAL RESEARCH LONDON (ENGLAND)

Preliminary Description and Specifications for a Danish Coastal Marine Data Collection System, (U)

JUL 77 16P Simpson,John P. ;
REPT. NO. ONRL-R-7-77

UNCLASSIFIED REPORT

DESCRIPTORS: *Data acquisition, *Oceanographic data, Real time, Sea water, Sea level, Sea states, Underwater sound, Acoustic velocity, Ice reporting, Buoyancy, Water waves, Baltic Sea, Straits, Water traffic, Cargo ships, Denmark, Hydrographic surveying, Data transmission systems, Navigational aids, Flowmeters, Tides, Gages, Automation (U)
IDENTIFIERS: Kattegat (U)

To an increasing extent Denmark is faced with a series of problems linked with the safe navigation of large and deep draft ships through the Danish waters. This is particularly important in the narrow and shallow fairways of the Baltic approaches where the waters have a transient nature because of their position between the fresh Baltic and the saline Kattegat. Instantaneous sea level, sea state, current, sound speed, ice probability and buoyancy are among the factors to be considered when navigating the Danish straits. The Royal Danish Administration of Navigation and Hydrography has undertaken the job of developing a system to measure or compute these parameters, providing 'real-time' oceanographic data to transiting ships. (Author) (U)

AD-A043 654 8/3 4/2 8/10 20/1
NAVAL OCEAN RESEARCH AND DEVELOPMENT ACTIVITY BAY ST LOUIS MISS

The Oceanographic/Meteorological Environment West of St. Croix, (U)

JUL 77 149P Burns,D. A. ;
REPT. NO. NORDA-13
MONITOR: CHES/NAVFAC FPO-1-77(14)

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Marine meteorology, Virgin Islands, Sea water, Temperature, Velocity, Seasonal variations, Oceanographic data, Meteorological data, Wind velocity, Thermoclines, Mixing, Ocean waves, Height, Diurnal variations, Ocean tides, Water flow, Storms, Wind, Drift, Salinity, Caribbean Sea, Circulation, Ranges(Facilities), Underwater tracking, Underwater sound, Acoustic velocity, Depth, Subtropical regions (U)
IDENTIFIERS: Saint Croix(Virgin Islands), Caribbean current, Trade winds, Ocean circulation (U)

A review of oceanographic and meteorological data was undertaken for the underwater tracking range west of St. Croix in order to assemble a scenario of the physical environment. Recent current meter data from three current meter arrays moored during February 1976 indicated that the most significant contributions to the time dependent flow are rotary motions that have maximum amplitudes coinciding with the semidiurnal tidal period (12.42 hours). Maximum horizontal current shear (1.2 cm/sec/m) occurs at about 100. Convective mixing appears to be the principal process of layer depth variations, which varied from a minimum of 50 during August to a maximum of about 120 during March. Surface winds are out of the east during all months, with speeds averaging from 10.4 knots in October to 14.0 knots in July. Maximum average wave heights (sea and swell) most frequently occur with periods between 10-11 seconds. Seasonal variation in sound velocity amounts to about 3 m/sec in the first 100 m, 2 between 100 and 300 and less than 2 m/sec from 300 to 900. (U)

AD-A043 589 8/3 14/2
NAVAL TORPEDO STATION KEYPORT WASH

Nanoose Range Current Characteristics at 274m Depth. (U)

DESCRIPTIVE NOTE: Final rept.,
MAY 77 80P Helton,Robert A. ;Holbrook, James R. ;
REPT. NO. NAVTORPSTA-1311

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Ocean tides, *Ranges(Facilities), Circulation, Measurement, Depth, Height, Predictions, Correlation techniques, Oceanographic data, Decision making (U)
IDENTIFIERS: Nanoose test range, Cross range currents (U)

The current structure at 274m depth in the Nanoose test range was studied to determine component speeds along-range centerline and cross-range centerline. This followed an earlier investigation to delineate water layers with minimum motion. Decision criteria for determining the necessity of testing-support current measurement are presented. (Author) (U)

AD-A043 397 8/3 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Current Meter and Temperature Records from the Windward Passage. (U)

DESCRIPTIVE NOTE: Technical rept.,
JUL 77 38P Metcalf,William G. ;Stalcup, Marvel C. ;Zemanovic,Marguerite ;
REPT. NO. WHOI-77-29
CONTRACT: N00014-66-C-0241, NSF-DES-71-00262

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Sea water, Temperature, West Indies, Straits, Water flow, Oceanographic data, Flowmeters, Oceanographic equipment, Salinity, Oxygen, Silicates, Bathymetry, Hydrographic surveying, Ocean ridges, Caribbean Sea, Channel flow, Velocity (U)
IDENTIFIERS: Windward passage, WUNR083004 (U)

During late 1973 and early 1974, current and temperature measurements were made close to the sill of the Windward Passage between Cuba and Hispaniola. In the course of ATLANTIS II Cruise 78 in November 1973, a brief bathymetric survey of the sill area was carried out followed by the anchoring of two arrays of current meters and temperature recorders. Hydrographic stations were occupied in the sill region to determine the temperature, salinity, oxygen and silicate characteristics of the water column. During KNORR Cruise 37 in February and March 1974, additional bathymetric and hydrographic station observations were made and the current meters and temperature recorders were recovered. In this report, some of the basic data from the moored arrays are presented. (Author) (U)

AD-A043 353 8/12
FLEET WEATHER FACILITY SUITLAND MD

Eastern-Western Arctic Sea Ice Analyses. (U)

76 210P

UNCLASSIFIED REPORT

DESCRIPTORS: *Sea ice, *Arctic Ocean, Area coverage, Seasonal variations, Charts, North Atlantic Ocean, North Pacific Ocean, Arctic regions, Ice formation, Ice openings, Great Lakes, Ice, Optical scanning, Scientific satellites, Radiometry (U)

The principal aim of this publication is to provide operators and researchers with historical weekly hemispheric analyses of sea ice conditions derived principally from satellite imagery supplemented by conventional observations. The charts constructed by Navy ice analysts under operational time constraints from satellite imagery and conventional data. Reanalysis with late data was not normally attempted; rather the current analysis was prepared incorporating this to the extent possible. The analysis was compared with available climatology in an attempt to eliminate gross errors. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A043 238 8/10 8/12
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Geophysical Data Summary for Fletcher's Ice Island (T-3) May 1962 - October 1974. Part A: Geophysical Data Listings. Part B: Bathymetric, Geomagnetic, and Gravity Profiles. Part C: Seismic Reflection Profiles. (U)

DESCRIPTIVE NOTE: Technical rept. May 62-Oct 74,
MAY 77 225P Hunkins,Kenneth ;Tiemann, Werner ;
CONTRACT: N00014-75-C-0595

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Report on Lamont-Doherty Survey of the World Ocean.

DESCRIPTORS: *Arctic Ocean, *Ocean bottom, *Ice Islands, Marine geophysics, Oceanographic data, Bathymetry, Gravity, Geomagnetism, Seismic data, Position(Location), Drift, Ocean currents, Seismic reflection, Tables(Data), Profiles, Depth, Time (U)
IDENTIFIERS: *Fletchers Ice Island, T-3 ice island, Ocean basins, WUNR307320 (U)

Position, depth, gravity and magnetic data collected at Ice Island (T-3) during the period from 1962 to 1974 are presented in tabular form at 12-hour intervals. The station orbited the Canada Basin during this interval. Drift tracks are presented as well as profiles of the geophysical data against time. Seismic reflection profiles over 4000 km of track are shown. (Author) (U)

AD-A043 200 8/7 8/3 4/2
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Structural and Sedimentological Evolution of the Somali Basin: Paleooceanographic Interpretations. (U)

DESCRIPTIVE NOTE: Doctoral thesis,
JUL 77 288P Burroughs,Richard H. , III;
REPT. NO. WHOI-77-34
CONTRACT: N00014-66-C-0241, NSF-27516

UNCLASSIFIED REPORT

DESCRIPTORS: *Indian Ocean, *Structural geology, *Sedimentology, *Marine geology, Ocean currents, Ocean bottom, Paleontology, Geologic formation, Seafloor spreading, Continental drift, Ocean ridges, Ocean bottom topography, Fracture(Mechanics), Atmospheric circulation, Monsoons, Upwelling, Sea water, Circulation, Marine climatology, Ocean models, Geologic age determination, Sedimentary rock, Stratigraphy, History, Theses (U)
IDENTIFIERS: Somali basin, Paleooceanography, Ocean basins, Paleoclimatology, Ocean circulation, WUNR083004 (U)

The paleooceanographic development of the Somali Basin in the northwestern Indian Ocean is determined through considering: the structural evolution of the area; its influence on Neogene atmospheric and oceanic circulation aas indicated in the sediment record; and variation in these circulation systems as seen in late Quaternary sediments. Chain Ridge forms the main structural element of the Somali Basin. Correlation of geophysical measurements along its topographically elevated portion with geophysical transects in the southern Somali Basin indicates that a buried portion of the Chain Ridge sector of Owen Fracture Zone extends at least to 7.5 deg S. In areas where crustal age may be estimated on both sides of the fracture zone, the sea floor to the west is at least 30 m.y. older than that to the east and may be considerably older. The trend of the fracture zone and the age of its segments control the time and direction of movement for india relative to Africa and Madagascar. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A043 105 8/7 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Evolution of the Norwegian-Greenland Sea. (U)

DESCRIPTIVE NOTE: Journal article,
AUG 75 32P Talwani,Manik ;Eldholm,Olav ;
REPT. NO. LDGO-2486
CONTRACT: Nonr-266(48), NONR-266(79)

UNCLASSIFIED REPORT
Availability: Pub. in Geological Society of America Bull., v88 p969-999 Jul 77.

DESCRIPTORS: *Norwegian Sea, *Greenland Sea, *OCean bottom, *Seafloor spreading, Marine geology, Structural geology, Magnetic anomalies, Geologic age determination, Ocean ridges, Fracture(Mechanics), Ocean bottom topography, Oceanic crust, Earth(Planet), Rotation, Rates, Marine geophysics, Seismic data, History, Evolution(General), Reprints (U)
IDENTIFIERS: WUNR083142 (U)

Geological and geophysical data collected aboard R/V Vema during five summer cruises in the period 1966 to 1973 have been used to investigate the geological history and evolution of the Norwegian-Greenland Sea. These data were combined with earlier data to establish the location of spreading axes (active as well as extinct), the age of the ocean floor from magnetic anomalies, and the locations and azimuths of fracture zones. The details of the spreading history are then established quantitatively in terms of poles and rates of rotation. Reconstructions have been made to locate the relative positions of Norway and Greenland at various times since the opening, and the implications of these reconstructions are discussed here. (U)

AD-A043 104 8/7 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Sediment Distribution and Structural Framework of the Barents Sea. (U)

DESCRIPTIVE NOTE: Journal article,
AUG 75 17P Eldholm,Olav ;Talwani,Manik ;
REPT. NO. LDGO-2484
CONTRACT: N00014-67-A-0108-0004, N00014-67-A-0108-0079

UNCLASSIFIED REPORT

Availability: Pub. in Geological Society of America Bull., v88 p1015-1029 Jul 77.

DESCRIPTORS: *Barents Sea, *Ocean bottom, *Sedimentary rock, Marine geology, Structural geology, Sediments, Spatial distribution, Seismic data, Velocity, Ocean bottom topography, Continental shelves, Geologic age determination, Stratigraphy, Metamorphic rock, Reprints (U)
IDENTIFIERS: Ocean basins, Sedimentary basins, WUNR083142 (U)

Marine geophysical surveys in the Barents Sea provide new data on the main structural elements and the distribution of sediments. The area is divided into four main regions on the basis of the sediment distribution and the seismic velocities: (1) The area between Svalbard, Bear Island, and Hopen is underlain by high-velocity sediments probably of early Mesozoic and late Paleozoic age. (2) There are two regional sedimentary basins which appear to merge into an extension of the Pechora Basin in the southeastern Barents Sea. The sediments are probably of Mesozoic and late Paleozoic age. The main structural fabric is southwest-northeast. (3) On the western continental margin there is a low-velocity wedge of Cenozoic material deposited on top of the layers found in the basins. (4) A region of outcropping basement is found adjacent to the southern coastline. The area developed as an epicontinental shallow sea connected with the sedimentary basins now found on the margins of Norway and Greenland. The major part of the Barents Sea was above sea level during most of Tertiary Period. (U)

AD-A042 982 8/7
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Descriptions of WHOI Sediment Cores. Volume 5. (U)

DESCRIPTIVE NOTE: Technical rept.,
APR 77 799P Johnson,D. A. ;Driscoll,A. H. ;
REPT. NO. WHOI-77-26
CONTRACT: N00014-74-C-0262, NSF-OCE-76-81488

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Supplement to Volume 1, AD-A013 997, Volume 2, AD-A013 998, Volume 3, AD-A013 999 and Volume 4, AD-A014 000.

DESCRIPTORS: *Marine geology, *Ocean bottom sampling, *Sediments, *Cores, Deep oceans, North Atlantic Ocean, Mediterranean Sea, South Atlantic Ocean, Tables(Data), Visual inspection, Lithology, Paleontology, Stratigraphy, Foraminifera, Mineralogy, Micropaleontology, Machine coding, Oceanographic equipment, Oceanographic ships (U)
IDENTIFIERS: Biostratigraphy, WUNR083004 (U)

This report supplements Volumes 1-4 of the core descriptions published previously. It contains visual descriptions and smear slides analyses for all cores received in the geological samples collection of the Woods Hole Oceanographic Institution between November, 1973 and November, 1976. Approximately 368 sample localities from the North Atlantic, Mediterranean, and South Atlantic are represented. Charts of ships' tracks and updated computer listings of all cores in the W.H.O.I. collection are also included. (U)

AD-A042 401 8/3 8/1
TEXAS A AND M UNIV COLLEGE STATION DEPT OF OCEANOGRAPHY

Repeated Nutrient, Oxygen, and Density Sections through the Loop Current, (U)

FEB 76 25P Morrison,John M. ;Nowlin, Worth D. , Jr;
REPT. NO. Contrib-657
CONTRACT: N00014-75-C-0259, NSF-GD-31790

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Marine Research, v35 n1 p105-128 Feb 77.

DESCRIPTORS: *Sea water, *Ocean currents, *Mexico Gulf, Oxygen, Nutrients, Circulation, Transport properties, Sources, Wind, Water flow, Density, Oceanographic data, Reprints (U)
IDENTIFIERS: *Loop current(Gulf of Mexico), Yucatan Current (U)

Based on observations made in May, 1972, the nutrient and dissolved-oxygen concentrations in the offshore waters of the eastern Gulf of Mexico are described and related to the Loop Current and anticyclonic current rings, which are the principal circulation features of this region. The characteristic relationships of oxygen and nutrients to density parameters are presented, and the following water masses are characterized in the Gulf: Subtropical Underwater, 18 C Sargasso Sea Water, upper subtropical oxygen minimum, Antarctic Intermediate Water, and North Atlantic Deep Water. Repeated sections through the Loop Current allow some estimation of variability within a period of weeks, as well as descriptions of spatial variations of properties. The relative geostrophic flow within the Loop is described. Transport estimates are compared to previous estimates of the Loop and to estimates through the Yucatan and Florida Straits based on measurements also made during May, 1972. The results are in good agreement. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0MO7

AD-A042 372 8/10 12/1
NUMERICAL COMPUTATION CORP STONY BROOK N Y*

A Numerical Algorithm for Remote Sensing of Ocean Density Profiles by Acoustic Pulses. (U)

DESCRIPTIVE NOTE: Final rept. 1 Jun 76-31 Jan 77,
FEB 77 36P Chen,Yung Ming ;Tsien,Dar Sun ;
REPT. NO. NCC-1
CONTRACT: N00014-76-C-0804
PROJ: F11121
TASK: RF11121804

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanography, *Density, *Acoustic velocity, *Profiles, Remote systems, Acoustic waves, Pulses, Inverse problems, Nonlinear systems, Solutions(General), Iterations, Algorithms, Numerical methods and procedures, Finite difference theory, Equations of state (U)
IDENTIFIERS: WUNR187904, PE62711N (U)

An iterative algorithm for solving nonlinear inverse problems in remote sensing of ocean density profiles by acoustic pulses is developed. The basic idea of this new algorithm is that first, the original pulse problem in the time-domain is reduced to a continuous wave problem in frequency-domain and then the nonlinear inverse problem in frequency-domain is solved by a hybrid of a Newton-like iterative method, Backus and Gilbert linear inversion technique, and the finite difference method. This new computational algorithm is tested by numerical simulations with given data from ten different frequencies and is found to give excellent results. (U)

AD-A041 661 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Zonal Variability in the Distribution of Eddy Energy in the Mid-Latitude North Pacific Ocean. (U)

JUN 76 8P Bernstein,Robert L. ;White, Warren B. ;
CONTRACT: N00014-75-C-0152

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Physical Oceanography, v7 n1 p123-126 Jan 77.

DESCRIPTORS: *Eddy currents, *Ocean currents, North Pacific Ocean, Bathythermograph data, Energy transfer, Reprints (U)

Hydrographic and expendable bathythermograph (XBT) data from several sources were drawn together to summarize the distribution of baroclinic mesoscale eddy energy in the mid-latitude North Pacific Ocean. A striking order of magnitude decrease in the energy distribution at 500-1000 km wave-lengths is observed to occur abruptly east of the 170 W meridian. Mean zonal wavenumber spectra, constructed from 16 zonal XBT sections on either side of 170 W, confirm these observations. (U)

AD-A041 103 8/3 8/10
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION MIAMI FLA ATLANTIC OCEANOGRAPHIC AND METEOROLOGICAL LABS

Collected Reprints-1975. Volume I. (U)

FEB 77 723P

UNCLASSIFIED REPORT
Availability: Supt. of Documents, GPO, Washington, D. C. 20402. HC $4.25.

DESCRIPTORS: *Oceanography, *Sea water, *Ocean currents, Reports, Reprints, Oceanographic data, Atlantic Ocean, Caribbean Sea, Mexico Gulf, Circulation, Ocean waves, Ocean tides, Ocean models, Temperature, Chemical oceanography (U)

This is the 10th annual publication of collected reprints of NOAA's Atlantic Oceanographic and Meteorological Lab. It brings together research results published during 1975 in a wide range of scientific and technical journals as well as in some internal NOAA publications. These laboratories conduct research on the physical, chemical, and geological characteristics and processes of the ocean waters, the seafloor, and the overlying atmosphere. During 1975, these research efforts were carried out by four major groups. Volume I contains general reprints and those from the Physical Oceanography Lab. Volume 2 contains reprints from the Marine Geology and Geophysics Lab., the Sea-Air Interaction Lab., and the Ocean Remote Sensing Lab. (U)

AD-A040 697 8/3
MASSACHUSETTS INST OF TECH CAMBRIDGE DEPT OF OCEAN ENGINEERING

The Resolution of Directional Wave Spectra Using the Maximum Likelihood Method. (U)

DESCRIPTIVE NOTE: Final rept. 1 Oct 75-31 Dec 76,
MAY 77 87P Oakley,O. H. , Jr.;Lozow, J. B. ;
REPT. NO. OE-77-1
CONTRACT: N00014-76-C-0338

UNCLASSIFIED REPORT
Availability: Microfiche copies only.

DESCRIPTORS: *Ocean waves, *Spectrum analysis, Mathematical models, Gages, Arrays, Oceanographic data, Spatial distribution, Flow charting, Orientation(Direction), Matrices(Mathematics), Covariance, Stability, Noise reduction, Radiated noise (U)
IDENTIFIERS: Maximum likelihood estimation (U)

The Maximum Likelihood Method is examined for use in measuring the directionality of ocean wave spectra in conjunction with sparse wave-gage arrays. Directional characteristics of small wave-gage arrays and the effects of noise, wavelength, and gage spacing are analyzed via simulated input spectra. A figure of merit is derived as an aid in array design. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A040 338 8/3
WEBB INST OF NAVAL ARCHITECTURE GLEN COVE N Y

Analysis of Wave Spectra at Station 'KILO'. Supplement. (U)

DESCRIPTIVE NOTE: Final rept. 1973-1975,
JAN 76 176P Hoffman,D. ;
CONTRACT: N00014-73-C-0101

UNCLASSIFIED REPORT
Availability: Microfiche copies only.
SUPPLEMENTARY NOTE: Supplement to rept. dated Oct 75, AD-A021 222.

DESCRIPTORS: *Ocean waves, *Oceanographic data, Computer printouts, North Atlantic Ocean, Tables(Data), Spectral energy distribution, Air water interactions, Wind velocity, Statistical data (U)
IDENTIFIERS: Wave height (U)

This report presents the results of the analysis of a limited sample of wave spectra obtained for Station 'Kilo' in the North Atlantic (93 records). Correlation of measured parameters, such as wave height and period, with surface log data (wind speed, observed wave height) is presented. Wave spectra were grouped by height and by period and resulting average parameters compared. Plots are given of the spectral families. Because of the limited sample available for Station K, results are less conclusive than for Station I. (Author) (U)

AD-A040 298 8/3
WASHINGTON UNIV SEATTLE APPLIED PHYSICS LAB

Chukchi Sea Oceanography: 1975 Measurements and a Review of Coastal Current Properties. (U)

DESCRIPTIVE NOTE: Data presentation and analysis rept., NOV 76 138P Garrison,G. R. ;
REPT. NO. APL-UW-7614
CONTRACT: N00123-74-C-2064
PROJ: F52555
TASK: ZF52555001

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Chukchi Sea, Bering Strait, Beaufort Sea, Coastal regions, Alaska, Oceanographic data, Hydrodynamics, Temperature, Salinity, Flow fields, Profiles, Sea ice, Freezing, Aerial photographs, Seasonal variations, Field conditions (U)
IDENTIFIERS: WU90249C2, PE62759N (U)

Oceanographic measurements made in the spring through holes in the ice in an area off Barrow, where the Barrow Canyon forms a sloping trough from the shallow Chukchi Sea into the deep Beaufort Sea, have revealed two interacting water movements: (1) a flow of highly saline water from the shallow Chukchi Sea into the Beaufort Sea through the Barrow Canyon, and (2) an uprising of Atlantic water from the depths of the Beaufort Sea into the Barrow Canyon. Examination of earlier oceanographic measurements along the coast and recent satellite photographs reveals the Alaskan Coastal Current as a continuous, well-defined stream close to the coast. In the summer, the current flows northeasterly at 100-150 cm/s, while in other seasons it is weak and sometimes reversed. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A039 501 8/3
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

Observations of Winds and Currents in Hood Canal. (U)

DESCRIPTIVE NOTE: Technical rept., JUN 76 37P Larsen,Lawrence H. ;
REPT. NO. TR-350, Ref-M76-47
CONTRACT: N00014-75-C-0502

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Oceanographic data, Oceanographic equipment, Measuring instruments, Field conditions, Magnetic tape, Ocean tides, Wind velocity, Puget Sound, Washington(State) (U)
IDENTIFIERS: *Hood Canal(Washington State), Current meters (U)

This report contains selected portions of data collected in Hood Canal. In the course of the study, 15 instruments were simultaneously measuring currents. The total amount of data collected amounts to approximately 4 years of data from a single instrument. This instrument sampled at 10 minute intervals. The shear volume of data collected precludes inclusion of the entire records in this document. Accordingly, selected portions of the data are presented. (U)

AD-A039 500 9/2 8/3
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

WHIMPER--A Library of Time Series Programs University of Washington, for Use on CDC 6400 Computer. (U)

DESCRIPTIVE NOTE: Technical rept., DEC 76 79P Irish,James D. ;Bendiner, Donna J. ;Levine ,Murray D. ;Zeh,Judy ;
REPT. NO. TR-342, Ref-M76-105
CONTRACT: N00014-67-A-0103-0014

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Also available as Washington Univ., Seattle. Applied Physics Lab. Rept. no. APL-7508.

DESCRIPTORS: *Computer programs, *Oceanographic data, Files(Records), Subroutines, Digital computers, Data storage systems, Data processing, Ocean tides, Universities, Washington(State) (U)
IDENTIFIERS: CDC 6400 Computers, Whimper computer program, WUNR083012 (U)

Documentation is provided for the use of computer subroutines for data analysis on the University of Washington campus computer. This includes routines for data storage and retrieval, spectral analysis, filtering, and tidal analysis. (U)

AD-A038 580 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Petrology and Geochemistry of Mafic Rocks from the Cayman Trench: Evidence for Spreading. (U)

DESCRIPTIVE NOTE: Journal article, JUL 76 8P Perfit,Michael R. ;
REPT. NO. LDGO-2425
CONTRACT: N00014-67-A-0108-0036

UNCLASSIFIED REPORT

Availability: Pub. in Geology, v5 p105-110 Feb 77.

DESCRIPTORS: *Igneous rock, *Marine geology, *Ocean ridges, Caribbean sea, Ocean bottom sampling, Petrology, Geochemistry, Tectonics, Reprints (U)
IDENTIFIERS: Cayman trench, Mafic rocks, Plate tectonics (U)

Rocks dredged from 16 localities within the Cayman Trench suggest a crustal sequence identical to that reported from the mid-oceanic ridge. Serpentinites, serpentinized peridotites, cumulate mafic rocks, and gabbros crop out deep along the precipitous north-trending ridges. Numerous basalts and dolerites crop out somewhat higher, along with minor amounts of limestone and sediment. Major-element variations and trace-element abundances substantiate the abyssal tholeiitic nature of the basalts and indicate possible shallow fractionation from a primary melt in the upper mantle. A combination of dynamic, hydrothermal, and contact metamorphism near the axial valley is proposed to explain the observed metamorphic features. The geochemical data, along with published geophysical evidence, support the hypothesis of a mid-Cayman spreading center in this tectonically complex region. (Author) (U)

AD-A038 526 8/3 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY SAN DIEGO CALIF MARINE PHYSICAL LAB

Temperature Measurement Array for Internal Wave Observations. (U)

DESCRIPTIVE NOTE: Summary rept.,
78 11P Occhiello,L. M. ;Pinkel,R. ;
REPT. NO. MPL-U-17/76
CONTRACT: N00014-75-C-1023, ARPA Order-2185

UNCLASSIFIED REPORT

DESCRIPTORS: *Internal waves, *Oceanography, *Temperature measuring instruments, Oceans, Temperature, Depth, Arrays, Thermometers, Pressure gages, Oceanographic equipment (U)

During the last six years the Marine Physical Laboratory has been engaged in a study of the internal wavefield in the upper ocean. Inasmuch as internal waves propagate horizontally, vertically, and in time, a four-dimensional (space-time) measurement was desired. To meet these requirements, a three-element temperature sensor system in an array 40 meters on a side, was created by mounting 3 booms on the R/P FLIP. Repeated temperature profiles were made from each of these booms. The system consists of temperature and depth profile sensors, winches to raise and lower the sensors, a computer to manage the data, and a central control unit. A vibrotron pressure sensor and two variable frequency thermometers are suspended from each of the booms. The first thermometer and the pressure sensor are placed at the bottom end of a 500 meter cable; a second thermometer is attached 188 meters up the cable. The cables are raised and lowered simultaneously by individual winches. Lowering the winch cable 220 meters provides sampling over a depth of 400 meters in the water column. The drop rate of the sensors is 4.5 meters/second. Vertical temperature resolution is 1 meter. Profiles are taken every two minutes by the three elements. The sensors are scanned by the computer while the elements descend. While the elements are being raised the computer is utilized for data display and initial analysis. (Author) (U)

AD-A038 329 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY SAN DIEGO CALIF MARINE PHYSICAL LAB

Cruise Report, INDOPAC Expedition, Legs 4, 5, 6, 7, and 8. (U)

DESCRIPTIVE NOTE: Summary rept.,
MAR 77 36P Shor,George G. , Jr.; Smith,Stuart M. ;
REPT. NO. MPL-U-30/77, SID-Ref-77-5
CONTRACT: N00014-75-C-0749, N00014-75-C-0704

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanography, Oceanographic ships, Bathymetry, Geomagnetism, Gravimetry, Philippines, South China Sea, Indonesia, Ocean currents, Geophysics, Geological survey, Turbidity currents (U)
IDENTIFIERS: Indopac expedition, Agor 10 vessel (U)

In the summer of 1976, the R/V THOMAS WASHINGTON of the Scripps Institution of Oceanography carried out a series of geophysical, geological, and physical oceanographic programs in the marginal basins between the Pacific Ocean and Asia, on legs 4 through 8 of INDOPAC Expedition. Work was in the Philippine, South China, Sulu, Celebes, Molucca, Banda, and Arafura Seas. This report includes chronology of work, cruise tracks, lists of samples, stations, and observations, and some preliminary results. Among the significant preliminary results were the sampling of metamorphic rocks along the Yap island arc; the observation of anomalous crustal structure beneath the Philippine Sea and the Okinawa Trough; measurement of about 10 km of melange material in the Molucca Sea; observation of continental crust beneath the Timor-Tanimbar-Aru troughs. A turbidity current was recorded by current meters off the Abra delta of Luzon. Strong south-flowing currents were recorded showing transport of water through Lifamatola Strait from the Pacific to the Indian Ocean. Work on leg 5 was in cooperation with the R/V CHIU LIEN of National Taiwan University; work on leg 8 was in cooperation with the R/V ATLANTIS II of Woods Hole Oceanographic Institution. (U)

AD-A037 904 8/3
COASTAL ENGINEERING RESEARCH CENTER FORT BELVOIR VA

Wave Climate at Selected Locations Along U.S. Coasts. (U)

DESCRIPTIVE NOTE: Technical rept., JAN 77 367P Thompson,Edward F. ;
REPT. NO. CERC-TR-77-1

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean waves, *Oceanographic data, United States, Coastal regions, North Atlantic Ocean, North Pacific Ocean, Mexico Gulf, Magnetic recording systems, Height, Pressure gages, Measuring instruments, Marine climatology (U)

Since 1948, the Coastal Engineering Research Center (CERC) and its predecessor, the Beach Erosion Board (BEB) have gathered wave data from U.S. coastal locations. Staff and pressure-sensitive gages, generally shore-based, were used to obtain the data; a few gages were operated at offshore locations. Wave records were initially 7-minute pen and ink records taken six times a day, but more recently, 1,024-second digital records on magnetic tape taken four times daily have been used to determine significant wave heights and periods. Summaries of significant heights and periods for 19 gage locations provide useful information on ranges, and annual and seasonal variations of wave climate. (Author) (U)

AD-A036 879 20/6 8/10
NAVAL INTELLIGENCE SUPPORT CENTER WASHINGTON D C TRANSLATION DIV

Determination of the Light Quantum Survival Parameter from the Characteristics of Light Fields in the Sea (Opredeleniye Velichiny Parametra Vyzhivaniya Knvanta Sveta po Kharakteristikam Svetovykh Poley v More). (U)

FEB 77 10P Prokudina,T. M. ;Pelevin, V. N. ;
REPT. NO. NISC-Trans-3886

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. of mono. Optika Okeana i Atmosfery, Leningrad, 1972 p157-168.

DESCRIPTORS: *Light transmission, *Sea water, *Oceanographic data, *Light scattering, Refractive index, Solar radiation, Stratification, Wave propagation, Measurement, Instrumentation, USSR, Translations (U)
IDENTIFIERS: Light Quantum survival parameter, Stratified inhomogeneous medium (U)

An important optical characteristic of seawater is the ratio of the light scattering index sigma to the attenuation index epsilon, called the quantum survival parameter, which in many cases is known with sufficient confidence. The widely used method of determination of this quantity involving separate measurement 1 of sigma and epsilon is frequently assoicated with large instrumental errors. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A036 878 8/10
NAVAL INTELLIGENCE SUPPORT CENTER WASHINGTON D C
TRANSLATION DIV

Ten Years of Scientific Activity of the Marine Hydrophysical Institute (Ukr SSR Academy of Sciences) in Sevastopol' (Desyat' let Nauchnoy Deyatel' nosti MGI AN USSR v Sevastopole). (U)

JAN 77 7P Kolesnikov,A. G. ;
REPT. NO. NISC-Trans-3881

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. of Trudy Morskogo Gidrofizicheskogo Instituta (USSR) n1(60) p17-25 1973.

DESCRIPTORS: *Oceanography, Scientific research, Translations, USSR (U)
IDENTIFIERS: Marine Hydrophysical Institute (U)

In 1961, the Marine Hydrophysical Institute was transferred to the Ukrainian SSR Academy of Sciences, and in 1963, moved to Sevastopol', where A. G. Kolesnikov arrived with twelve former associates. They were faced with the task of effectively reconstructing the institue, determining the subject fields of the main scientific directions to be followed, creating the most effective organizational structure, recruiting scientific personnel, and solving many urgent problems of production and economic development. It is now apparent that this objective has been successfully achieved. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A036 877 8/10 8/1 8/3
NAVAL INTELLIGENCE SUPPORT CENTER WASHINGTON D C
TRANSLATION DIV

Research Carried Out during the Sixth Cruise of the R/V AKADEMIK VERNADSKIY (September 1972-January 1973) (Nauchnyye Issledovaniya v Shestom Reyse nis Akademik Vernadskiy (Sentyabr' 1972-Yanvar' 1973 gg.)). (U)

JAN 77 9P Neuymin,G. G. ;Sukhovey,V. F. ;
REPT. NO. NISC-Trans-3880

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. of Trudy Morskogo Gidrofizicheskogo Instituta (USSR) n2(61) p228-239 1973.

DESCRIPTORS: *Caribbean Sea, *Oceanographic data, Hydrology, Data acquisition, Water chemistry, Optical analysis, Sediments, Contamination, Air water interactions, Marine biology, Geomagnetism, Spatial distribution, Bioluminescence, Currents, Translations, USSR (U)

The article gives preliminary results of processing and analysis of observations made under the USSR National Programs of Joint Study of the Caribbean Sea and Adjacent Regions (JSCAR). It discusses the water circulation pattern and certain characteristics of the formation of fields of hydrological, optical, and hydrochemical elements in the Caribbean Sea. (Author) (U)

AD-A036 334 8/3
RHODE ISLAND UNIV KINGSTON GRADUATE SCHOOL OF OCEANOGRAPHY

Distribution and Movement of Cyclonic Gulf Stream Rings. (U)

DESCRIPTIVE NOTE: Technical rept., FEB 77 148P Lai,David Y. ;Richardson, Philip L. ;
REPT. NO. URI/GSO-Ref-77-1
CONTRACT: N00014-68-A-0215-0003

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with Woods Hole Oceanographic Institution, Mass., under Contract N00014-74-C-0262.

DESCRIPTORS: *Ocean currents, *Gulf stream, Rings, Distribution, Anomalies, Bathythermograph data, Eddy currents, Energy transfer, Motion, Sargasso sea, Oceanographic data (U)
IDENTIFIERS: *Cyclonic rings, WUNR083165, WUNR083004 (U)

A study of the general distribution and movement of cyclonic Gulf Stream rings was made by analysing 50,000 temperature records obtained from the National Oceanographic Data Center and Fleet Numerical Weather Central. The data were taken from 1970 through 1973 in the region bounded by 20-40 N and 50-80 W. Additional ring observations from other sources were also used. Twelve ring time-series, together with fifteen single ring observations were obtained; approximately eleven rings were found to exist at one time. They typically moved westward, turned southwest when close to the Gulf Stream and appeared to coalesce with the Stream near Florida. On the average, about one and a half rings a year moved down this path, with a mean speed of three km a day and an estimated life span of two to three years. Although rings were concentrated in the northwestern Sargasso Sea, a few were found east of 60 W. However, the low data density in the eastern region prevented detailed analysis there. Several warm eddies, with at least a 150-meter deepening of the main thermocline, were also found. (Author) (U)

AD-A036 019 8/1 8/10
ROSENSTIEL SCHOOL OF MARINE AND ATMOSPHERIC SCIENCE MIAMI FLA

Caribbean Zooplankton. Part I. Siphonophora, Heteropoda, Copepoda, Euphausiacea, Chaetognatha and Salpidae. Part II. Thecosomata. (U)

DESCRIPTIVE NOTE: Final rept. Apr 71-Aug 76, JUN 76 721P Michel,H. B. ;Foyo,Maria ; Haagensen,D. A. ;
CONTRACT: N00014-67-A-0201-0013, N00014-75-C-0173

UNCLASSIFIED REPORT
Availability: Supt. of Documents, GPO, Wash., D. C. 20402 HC $13.00.
SUPPLEMENTARY NOTE: Errata sheet inserted.

DESCRIPTORS: *Zooplankton, *Caribbean Sea, Marine biology, Sampling, Abundance, Florida Strait, Mexico Gulf, Ocean currents, Upwelling, Chemical oceanography, Indicators, Ocean surface, Geographical distribution, Statistical data, Tropical regions, Spatial distribution, Depth, Sea water, Salinity, Hydrographic surveying, Bathythermograph data, Temperature, Mollusca (U)
IDENTIFIERS: Water masses, Yucatan Channel, Pteropods, Siphonophora, Copepoda, Euphausids, Chaelognatha, Salpidae, Heteropoda, Thecosomata, WUNR083060 (U)

Plankton and hydrographic data collected during 8 cruises in the oceanic Caribbean, adjacent waters, Florida Straits, and Gulf of Mexico were analyzed for species occurrence, relative abundance, and horizontal and vertical distribution in relation to water masses. Plankton was sampled in horizontal tows at several levels between surface and bottom. Because over 400 pelagic copepod species occur in the area, 20 species common in major portions of the water column were individually counted and the remainder enumerated as totals of calanoids, harpacticoids and cyclopoids; cyclopoids almost equal calanoids numerically. Greatest numbers occurred in Tropical Surface Water and Subtropical Underwater, but many species are essentially restricted to Subantarctic Intermediate and North Atlantic Deep Water. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A035 721 8/3 4/2
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Average Features of the Subsurface Thermal Field in the Central Pacific. (U)

NOV 76 85P Barnett,T. P. ;Ott,J. D.
;
REPT. NO. SIO-Ref-76-20
CONTRACT: N00014-75-C-0152-6043

UNCLASSIFIED REPORT

DESCRIPTORS: *Pacific Ocean, *Oceanographic data, *Climate, *Bathythermograph data, Subsurface, Thermoclines, Ocean surface, Instrumentation, Standard deviation, Oceanographic ships, Tables(Data), Hydrography, Depth, Temperature (U)
IDENTIFIERS: Norpax project (U)

The purpose of this report is to present the climatology of subsurface temperature in the central Pacific Ocean. This climatology provides an in-depth'fine-scale' description of the thermal structure as opposed to the general climatology developed by Robinson (1976) in that it (a) presents finer horizontal and vertical scale information on the temperature field, (b) utilizes data not included in previous climatologies, and (c) represents actual observations as opposed to smoother fields derived from actual observations. These improvements in the climatology will be useful in the NORPAX project for determining the depth to which temperature anomalies penetrate in the ocean. Also, the data from which the climatology is developed can be used to study the interannual changes in heat content of the central ocean. It was with these ideas in mind that the present work was undertaken. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A035 689 8/10 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Physical and Chemical Data Report; EXJIBIA, SPHERES II - MAI HAI, BUOY BOUNCE, NOVA Expeditions. (U)

JUN 75 85P
REPT. NO. SIO-Ref-75-14
CONTRACT: N00014-75-C-0152

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Includes errata sheet dated Sep 76.

DESCRIPTORS: *Oceanographic data, Chemical oceanography, Ocean currents, Plankton, Migration, Bathythermograph data, Pacific Ocean, Marine geology, Sea water, Salinity, Temperature, Density, Gases, Dissolving (U)

The data were obtained from Nansen bottle casts and S/T/D lowerings (BUOY BOUNCE Only). Preceding the tabulated data for each Expedition are: (1) a description of the principal purpose of the cruise and the sponsoring agency; (2) a description of all 'non-standard' procedures, (3) a list of scientific personnel participating in the collection of data; and (4) a list of publications utilizing the Expedition data. A chart showing the positions of hydrographic and S/T/D stations also precedes the tabulated data. These data were collected and processed primarily by DCPG, MLRG at SIO. (Author) (U)

AD-A035 402 8/12 8/10 8/3 4/2
COAST GUARD WASHINGTON D C OCEANOGRAPHIC UNIT

Oceanography of the Grand Banks Region of Newfoundland March 1971 - December 1972. (U)

DESCRIPTIVE NOTE: Oceanographic rept. Apr-Jun 72,
JUN 76 306P Scobie,Robert W. ;Schultz, Richard H. ;
REPT. NO. USCG-373-70

UNCLASSIFIED REPORT

DESCRIPTORS: *Icebergs, *Sea ice, *Oceanographic data, *North Atlantic Ocean, Temperature, Salinity, Bathythermograph data, Marine meteorology, Meteorological data, Drift, Ocean bottom topography, Continental shelves, Ocean waves, Wind, Atmospheric temperature, Barometric pressure, Sea water, Surface temperature, Patrolling, Coast Guard ships, Hydrographic surveying, Ocean currents (U)
IDENTIFIERS: *Grand banks, Icelandic low (U)

Results of oceanographic surveys off the Grand Banks of Newfoundland from April through June 1972 in support of International Ice Patrol and twelve occupations of Standard Sections A1-A4 are discussed. Analysis includes vertical temperature and salinity profiles for each section as well as dynamic-topographic charts for each Ice Patrol survey. Normal dynamic topography charts of the Grand Banks region are updated. Results are similar to those obtained by Soule (1964 -- AD 605 320). Finally there is a discussion of the oceanographic and meteorological conditions which caused more icebergs to drift south of 48 deg N in 1972 than in any previous year in Ice Patrol history. These conditions include iceberg supply, wind, currents, waves/sea ice, sea temperatures, air temperatures, and precipitation. It is concluded that the single most important factor effecting these conditions is the location and intensity of the Icelandic low. (U)

AD-A035 207 8/10 8/3
OFFICE OF NAVAL RESEARCH ARLINGTON VA

Report Availability Notice, Spring 1976, (U)

76 578P Kielhorn,William V. ;
REPT. NO. ONR-ACR-216

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated 1975, AD-A010 135.

DESCRIPTORS: *Oceanography, Reports, Abstracts, Marine biology, Ocean bottom, Ocean waves, Marine geology, Marine geophysics, Chemical oceanography, Air water interactions, Marine meteorology, Underwater sound, Oceanographic equipment, Oceans, Naval research, Oceanographic data (U)
IDENTIFIERS: Form 1473(DD) (U)

This is one of a series of reports consisting of DD forms 1473, which include abstracts of recent technical reports generated by contractors sponsored by the Ocean Science and Technology Division (Code 480) of the Office of Naval Research. AD numbers are included. (U)

AD-A035 186 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Late Jurassic and Early Cretaceous Evolution of the Western Central Pacific Ocean. (U)

DESCRIPTIVE NOTE: Journal article,
APR 76 21P Larson,Roger L. ;
REPT. NO. LDGO-2415
CONTRACT: N00014-75-C-0210, NSF-DES-71-00214

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geomagnetism and Geoelectricity, v28 p219-236 1976.

DESCRIPTORS: *Marine geology, *Pacific Ocean, *Seafloor spreading, Ocean bottom topography, Geologic age determination, Faults(Geology), Evolution(Development), Seamounts, Magnetic anomalies, Tectonics, Reprints (U)
IDENTIFIERS: Plate tectonics, Hawaiian lineations, Pacific plate, Phoenix lineations, Jurassic period, Cretaceous period, WUNR083142 (U)

The Phoenix lineations are a set of east-west trending magnetic anomalies that recorded sea-floor spreading in the Nauru and Central Pacific Basins of the western Pacific from the Late Jurassic through the Early Cretaceous. The northern portions of these basins near the Marshall-Gilbert Islands are characterized by a magnetic quiet zone that presumably formed in the Late Jurassic prior to M25 (153 m.y.). In the eastern part of the Central Pacific Basin just east of Magellan Rise is a northwest trending M11 (126 m.y.) to M4 (117 m.y.) anomaly sequence. The geometry and spreading rates associated with the east-west trending Phoenix lineations and the Hawaiian lineations to the north suggest that the two patterns met at a fault-fault-ridge triple junction from M25 (153 m.y.) until M14 (131 m.y.) time. This system underwent a readjustment between M14 and M10 time that transferred the Magellan Rise from the Phoenix plate to the Pacific plate and established two triple junctions in place of the previous one. A stable fault-fault-ridge junction formed just southeast of Magellan Rise to connect the east-west and northwest trending Phoenix lineations, while a slow-spreading, (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0MO7

AD-A035 170 4/2 9/2
NAVAL ENVIRONMENTAL PREDICTION RESEARCH FACILITY MONTEREY CALIF

Ocean Climatology Extraction and Adjustment Program for the Mediterranean Program SOVEL, (U)

JUL 73 24P Laevastu,Taivo ;
REPT. NO. NEPRF-CP-Note-10

UNCLASSIFIED REPORT

DESCRIPTORS: *Marine climatology, *Mediterranean Sea, *Computer programs, FORTRAN, Surface temperature, Temperature, Salinity, Gradients, Subroutines, Underwater sound, Sound transmissi (U)
IDENTIFIERS: Sovel program (U)

SOVEL was written as part of the Ocean Thermal Structure Analysis package for Fleet Weather Central, Rota, Spain. Its primary purpose is to extract the temperature and salinity levels (by one-degree squares) in desired locations from an ocean climatology tape. It takes the corresponding analyzed sea-surface temperature and the mixed layer depth at given locations which are read from input cards and adjusts the upper standard levels to these parameters. An additional feature of the program is the adjustment of the temperature and salinity gradients below the mixed layer depth. These gradients can be sharp indeed in the Mediterranean. Their sharpness varies with various parameters and seasons and this variation has been taken directly into consideration with this program.
(Author) (U)

AD-A034 960 8/7
TEXAS A AND M UNIV COLLEGE STATION

Seismic Profile Tying Caribbean DSDP Sites 153, 151, and 152. (U)

76 6P Moore,George T. ;Fahlquist, Davis A. ;
CONTRACT: N00014-68-A-0308-0002, NSF-GA-1296

UNCLASSIFIED REPORT
Availability: Pub. in Geological Society of America Bulletin, v87 n61109 p11609-1614 Nov 76.

DESCRIPTORS: *Stratigraphy, *Ocean bottom, *Caribbean Sea, Marine geology, Seismic reflection, Profiles, Sedimentation, Sedimentary rock, Reprints (U)

Correllation between this geophysical profile and the DSDP results is excellent. Some record times do not tie exactly with the thicknesses computed from velocities averaged from DSDP measurements, but this is not regarded as a serious problem. This correlation permits a reconstruction and interpretation of the complete stratigraphic history along this section. It is believed that regional seismic lines that tie several significant sites on one continuous profile can be of great value in relating lithologic descriptions for discrete localities to regional events. Such relationships, which can be established and traced on long regional profiles or a network of them, include lithologic continuity, facies changes, unconformities, and structural deformation. Programming such lines requires planning, but the potential results can be of considerable scientific value, (U)

AD-A034 671 8/3 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

A Compilation of Moored Current Data and Associated Oceanographic Observations. Volume XII. 1973 Mid-Ocean Dynamics Experiment (MODE). (U)

DESCRIPTIVE NOTE: Technical rept.,
NOV 76 324P Chausse,D. ;Tarbell,S. ;
REPT. NO. WHOI-76-101
CONTRACT: N00014-66-C-0241, N00014-76-C-0197
PROJ: NR-083-004, NR-083-400

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 10, AD-A031 858.

DESCRIPTORS: *Ocean currents, *Oceanographic data, *Mooring buoys, Temperature, Pressure, Depth, Salinity, Time series analysis, Spectrum analysis, Tables(Data), Oceanographic ships, Diagrams, North Atlantic Ocean (U)
IDENTIFIERS: Chain Vessel, MidOcean Dynamics Experiment (U)

Summaries are presented of basic current, temperature and pressure measurements which were made from moored instruments as a part of the MidOcean Dynamics Experiment (MODE) which took place March to July 1973. Current data are presented as basic statistics, spectral diagrams, progressive vector diagrams, east vs. north plots, and variables vs. time plots. (U)

AD-A034 635 8/10
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Atlantic Water on the Chukchi Shelf. (U)

DESCRIPTIVE NOTE: Interim rept. 1 Jul 75-30 Jun 76,
DEC 76 7P Bourke,Robert H. ;Paquette,
Robert G. ;
REPT. NO. NPS-68BF76121
PROJ: F52555
TASK: ZF52555012

UNCLASSIFIED REPORT
Availability: Pub. in Geophysical Research letters, v3 n10 p629-632 Oct 76.

DESCRIPTORS: *Sea water, *Chukchi Sea, Bering Sea, Anomalies, Atlantic Ocean, Layers, Salinity, Temperature, Oceanographic data, Alaska, Continental shelves, Reprints (U)
IDENTIFIERS: WU9024909, PE62759N (U)

An anomalously warm saline layer in the bottom of the shallow Chukchi Sea in August 1975 is believed due to a surge which drove water from the Atlantic Layer of the Arctic Ocean up onto the shelf. Two earlier occurrences of this kind of water in the Chukchi Sea have been identified in historical data. (Author) (U)

AD-A034 563 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Clay Mineralogy and Sedimentation in the Western Indian Ocean. (U)

DESCRIPTIVE NOTE: Journal Article,
NOV 75 15P Kolla,Venkatarathnam ;
Henderson,Lawrence ;Biscaye,Pierre E. ;
REPT. NO. LDGO-2363
CONTRACT: N00014-75-C-0210, NSF-DES-72-01568

UNCLASSIFIED REPORT
Availability: Pub. in Deep Sea Research, v23 p949-961 1976.

DESCRIPTORS: *Ocean bottom soils, *Indian Ocean, Sedimentation, Ocean bottom sampling, Clay, Mineralogy, Distribution, Ocean currents, Deposition, Reprints (U)
IDENTIFIERS: WUNR083142 (U)

The clay mineralogy of 235 surface sediment samples from the western Indian Ocean reveals many sedimentary sources and processes: (1) some areas, mainly in the central Indian Ocean, where very little sediment transport is involved, have smectite-rich clays derived from the alteration of in situ submarine basalts. (2) In many other areas, the mineralogy is significantly influenced by several modes of long-distance sediment transport, and the continental climate or the southern ocean volcanism. These areas consist of: (a) smectite-rich sediments in the Crozet and Madagascar basins and in the eastern Arabian Sea; (b) illite-rich sediments in the Indus Cone, the Agulhas Basin, and the ocean adjacent to Africa west of the Agulhas Plateau; (c) illite-palygorskite-rich sediments on the Carlsberg Ridge, Owen Ridge and in the westernmost Arabian Sea; (d) illite-Kaolinite-rich sediments in the Mozambique Basin and in the regions between Madagascar and Africa; (e) kaolinite-rich sediments adjacent to central Africa and Madagascar. (3) A third category of areas has mixed type sediments with no specific mineral in characteristically high amounts. Mixing of sediments derived from the alteration of in situ submarine basalts and/or from other areas rich in different minerals resulted in this group. (U)

AD-A034 557 8/8 8/7 8/3 8/10
LOUISIANA STATE UNIV BATON ROUGE COASTAL STUDIES INST

Circulation and Salinty Distribution in the Rio Guayas Estuary, Ecuador. (U)

DESCRIPTIVE NOTE: Technical rept., 75 22P Murray,Stephen P. ;Conlon, Dennis ;Siripong,Absornsuda ;Dantoro,Jose ;
REPT. NO. TR-220
CONTRACT: N00014-75-C-0192, N00014-69-A-0211-0003

UNCLASSIFIED REPORT
Availability: Pub. in Estuarine Research, Geology and Engineering, v2 p345-363 1975.

DESCRIPTORS: *Estuaries, *Circulation, *Tidal currents, *Salinity, Oceanography, Limnology, *Marine Geology, Ecuador, Ocean tides, Fresh water, Sea water, Phase shift, Marine meteorology, Periodic variations, Cyclic rate, Boundary layer, Mapping, Reprints (U)
IDENTIFIERS: *Rio guayas estuaries, Gravity convection, WUNR388002 (U)

Observations of velocity and salinity profiles over a tidal cycle were made throughout the Guayas esturine complex. Bihourly maps of the tidal current field show a nearly 2-hour phase shift from the estuary mouth to Guayaquil and a slack-water/ high-tide phase lag in accordance with a frictionally retarded long wave in a nonuniform channel. A zone of intense mixing of river water and sea water is identified south of Guayaquil, and the flushing time indicated by the longitudinal salinity distribution is calculated at about 21 days. Gravitational convection is poorly developed and present only locally, but a significant upstream salt flux does occur in the tidal prism. The Hansen and Rattray circulation-stratification diagram successfully classifies the Guayas system as a poorly developed, partially mixed (type 2B) estuary. (Author) (U)

AD-A034 363 8/3
FLORIDA STATE UNIV TALLAHASSEE DEPT OF OCEANOGRAPHY

A Numerical Simulation of the Onset of El Nino, (U)

JAN 76 13P Hurlburt,H. E. ;Kindle, John C. ;O'Brien,James J. ;
REPT. NO. 147, Contr.b-124
CONTRACT: N00014-75-C-0201

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Physical Oceanography v6 n5 p621-631 Sep 76.

DESCRIPTORS: *Sea water, *Pacific Ocean, Heating, Surface temperature, Tropical regions, Internal waves, Ocean Models, Coastal regions, Wind, Hydrodynamics, Reprints (U)
IDENTIFIERS: *El Nino phenomenon, WUNR083231 (U)

El Nino may be defined oceanographically as a massive influx of warm water into the coastal region of Ecuador and Peru. We have tested the hypothesis that these rare events occur after a substantial reduction of the atmospheric trade winds over the central Pacific Ocean. An idealized nonlinear, two-layer, equatorial beta-plane ocean is spun-up with easterly winds for 50 days after which the wind is relaxed over several days. The relaxation of the wind initiates internal Kelvin wave fronts at both sides of the ocean at the equator. The eastern wave fronts propagate poleward and the western ones eastward. Internal Rossby waves are generated which propagate westward from the eastern boundary. As the Kelvin wave fronts move poleward along the eastern boundary, strong downwelling occurs and the coastal currents reverse direction and become poleward. The rapid downwelling and the sudden reversal of the coastal current are consistent with observations during El Nino. This downwelling is much more rapid than the upwelling which occurred during spin-up due to nonlinear Kelvin wave dispersion. The dispersion results in the development of a frontal character at the leading edge of the waves. When the western Kelvin wave fronts reach the eastern boundary, the downwelling ceases and the poleward currents separate from the coast, propagating westward as Rossby waves. (U)

AD-A034 108 8/10 8/3
COAST GUARD WASHINGTON D C OCEANOGRAPHIC UNIT

Oceanography of the New York Bight, August 1974. (U)

DESCRIPTIVE NOTE: Oceanographic rept., JUN 76 96P Morgan,Charles W. ;Bishop, Joseph M. ;Mulher,Frank F. ;
REPT. NO. USCG-373-71

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, Continental shelves, Continental slopes, North Atlantic Ocean, Surface temperature, Temperature, Salinity, Density, Mixing, Geostrophic wind, Ocean currents, Graphs, Tables(Data), Depth, Profiles, Eddy currents, New York, New Jersey (U)
IDENTIFIERS: *New York Bight (U)

The physical oceanography of the shelf and slope waters of the New York Bight (Block Island to Cape May) in August of 1974 is described. Temperature, salinity, and density data, presented in surface contours and section profiles, showed the shelf/slope front, a cold core on the shelf, and a salinity core on the slope. Geostrophic currents in the slope water were inferred from the density structure, and showed two anticyclonic eddies with maximum geostrophic velocities of approximately 40 cm. Temperature and salinity profiles indicated shelf/slope mixing related to the eddies. (U)

AD-A033 202 8/5 8/10
HAWAII INST OF GEOPHYSICS HONOLULU

The Effect of Seamounts and Other Bottom Topography on Marine Gravity Anomalies, (U)

74 18P Rose,Johm C. ;Bowman,Bruce R. ;
REPT. NO. HIG-Contrib-608
CONTRACT: N00014-70-A-0016-0001

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Published in Proceedings of the International Symposium on Applications of Marine Geodesy, p381-396, 1974.

DESCRIPTORS: *Gravity anomalies, *Marine geology, *Ocean bottom topography, *Seamounts, Perturbations, Oceanographic data, Profiles, Ocean bottom sampling, Oceanography, Bathymetry, Gravimetry (U)

Localized bathymetric features produce large amplitude perturbations in the marine free-air gravity anomalies. In order to study long wavelength anomalies, which are of particular interest in marine geodesy, it is desirable to remove the topography 'noise level'. However, to do this in a truly three-dimensional fashion along a marine gravity track is not practical becuase of the formidable amount of data preparation required. It is also undesirable to use conventional Bouguer anomalies becuase these can easily be in error by 60% because of the one-dimensional nature of the correction. A computer progam was developed which calculates the sea-surface three-dimensional gravity effect of a conical seamount from a point above the apex to any distance off-axis. The results of this program are compared with those of a Talwani two-dimensional equivalent of a ship track across the off-axis hyperbolic slice of the cone. A study of more than 100 seamounts in the Pacific Ocean showed that their slope angles of from 4.5 to 17 degrees. For this reason, model cases with slope angles of 5, 10 15 degrees in water depths of 1 to 6 km were considered. For a seamount with its apex at 2-km depth and base at 5-km depth and 10 degree slope angle, the two-dimensional method over-corrects by 18 percent over the apex, (U)

AD-A033 161 8/10 8/1 8/3
OREGON STATE UNIV CORVALLIS SCHOOL OF OCEANOGRAPHY

Compilation of Reprints, (U)

DEC 75 82P Dorman,Clive E. ;Pond,S. ; Culberson,C. H. ;Pytkowicz,R. M. ;Atlas,E. L. ;
REPT. NO. Ref-75-15, Ref-75-16
CONTRACT: N00014-67-A-0369-0007

UNCLASSIFIED REPORT

Availability: Pub. in various jnls.
SUPPLEMENTARY NOTE: Also includes Rept. nos. Ref-75-19, Ref-75-21, Ref-75-22, Ref-75-23 and Ref-75-24.

DESCRIPTORS: *Oceanography, Buoys, Ion exchange, Marine biology, Nutrient analysis, Upwelling, Shrimp, Meteorology, Silicon dioxide, Coastal regions, Reprints (U)
IDENTIFIERS: WUNR083102 (U)

Reprint: Compilation of Reprints.

AD-A033 077 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

The Vertical Propagation of Inertial Waves in the Ocean. (U)

DESCRIPTIVE NOTE: Technical rept.,
JUN 75 178P Leaman,Kevin Douglas ;
REPT. NO. WHOI-76-109
CONTRACT: N00014-66-C-0241, N00014-74-C-0262

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Doctoral thesis.

DESCRIPTORS: *Ocean waves, *Internal waves, Inertia, Oceanographic data, Flowmeters, Kinetic energy, Vertical orientation, Profiles, Polarization, Signal to noise ratio, South Atlantic Ocean, Ocean surface, Theses (U)
IDENTIFIERS: WUNR083004 (U)

A set of vertical profiles of horizontal ocean currents, obtained by electro-magnetic profilers in the Atlantic Ocean southwest of Bermuda in the spring of 1973, has been analyzed in order to study the vertical structure and temporal behavior of internal waves, particularly those with periods near the local inertial period. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A033 047 8/3
NAVAL INTELLIGENCE SUPPORT CENTER WASHINGTON D C
TRANSLATION DIV

Spectral Characteristics of Cylindrical Sensors of Hydrophysical Instruments (Spektral'nyye kharakteristiki Tsilindricheskikh Datchikov Gidrofizicheskikh Priborov), (U)

OCT 76 8P Dotsenko,S. V. ;Kuleshova, V. N. ;Nedovesov,A. N. ;
REPT. NO. NISC-Trans-3869

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. from Morskoy Gidrofizicheskiy Institut (USSR) n1 (57) p88-95 1972.

DESCRIPTORS: *Oceanography, *Instrumentation, *Detectors, Cylindrical bodies, Frequency response, Bathymetry, Acoustic velocity, Opacity, USSR, Translations (U)

The article discusses the transformation of the spectrum of the measured field into the spectrum of the output signal by a cylindrical sensor during its uniform linear motion and for two types of orientation. The calculations presented make it possible to construct sensors with specified spectral characteristics. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A033 046 8/3
NAVAL INTELLIGENCE SUPPORT CENTER WASHINGTON D C
TRANSLATION DIV

Instrumentation for Multichannel Recording of Hydrophysical Measurements (Kompleks Apparatury Dlya Mnogokanal'noy Registratsii Gidrofizicheskikh Izmereniy), (U)

OCT 76 6P Golosko,V. A. ;Dorner,L. I. ;Kushnir,V. M. ;Paramonov,A. N. ; Khokhlov,A. V. ;
REPT. NO. NISC-Trans-3872

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. from Morskoy Gidrofizicheskiy Institut (USSR), n6 (56) p164-170 1971.

DESCRIPTORS: *Oceanography, *Instrumentation, Digital systems, Recording systems, Physical properties, Ussr, Translations, Multichannel, Accuracy (U)

The paper gives a description of instrumentation designed for visual.zation, digital and graphic recording of data from measuring instruments and individual sensors used for studying physical fields in the ocean. (Author) (U)

AD-A033 045 8/10 12/1
NAVAL INTELLIGENCE SUPPORT CENTER WASHINGTON D C
TRANSLATION DIV

Method and some Results of Adaptive Measurements (Metodika i Nekotoryye Rezul'taty Adaptivnykh Izmereniy), (U)

OCT 76 13P Kolesnikov,A. G. ;Paramanov, A. N. ;Kushnir,V. M. ;
REPT. NO. NISC-Trans-3871

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. from Morskoy Gidrofizicheskiy Institut (USSR) n6 (56) p95-108 1971.

DESCRIPTORS: *Oceanographic data, *Statistical analysis, Measurement, Adaptive systems, Spectrum analysis, Seasonal variations, Diurnal variations, Algorithms, Computer applications, Sea states, Sea level, Transparence, Translations, USSR (U)

The article presents the principles of investigation of physical fields in the ocean with adaptation of the measuring algorithm to the statistical structure of a field and describes the results of experiments. (Author) (U)

AD-A033 041 8/3 14/2
COASTAL ENGINEERING RESEARCH CENTER FORT BELVOIR VA

Measurement Techniques for Coastal Waves and Currents. (U)

DESCRIPTIVE NOTE: Miscellaneous rept., NOV 76 79P Teleki,P. G. ;Musialowski, F. R. ;Prins,D. A. ;
REPT. NO. CERC-MR-76-11

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean waves, *Ocean currents, Coastal regions, Flowmeters, Data acquisition, Inshore areas, Oceanographic equipment, Sleds, Towed bodies, Detectors, Collecting methods (U)
IDENTIFIERS: Current meters, Wave gages (U)

A Towed Oceanographic Data Aquisition System (TODAS) consisting of a towed platform (sea sled) with current meters and a wave gage has been developed for collection of information on nearshore currents and waves. Data acquired by the sensors are telemetered to shore and digitally recorded. TODAS is used for real-time evaluation of flow characteristics between shore and a depth of 9.14 meters (30 feet); this mobile battery-operated system can be used at remote locations. The system has been used principally in two experimental designs: (a) Monitoring the distribution of longshore currents in shore-normal profiles, and (b) a combination of Eulerian-Lagrangian experiments where fixed-point metering is supported by aerial photography of diffusing dye plumes and concentration measurements of the dye tracers. (Author) (U)

AD-A032 948 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

The Bottom Boundary Layer of the Deep Ocean. (U)

DESCRIPTIVE NOTE: Technical rept.,
APR 76 12P Armi,Laurence ;Millard, Robert C. , Jr;
REPT. NO. WHOI-76-103, WHOI-Contrib-3744
CONTRACT: N00014-66-C-0241, NSF-GX-29054
MONITOR: NSF/IDOE 76-307

UNCLASSIFIED REPORT

Availability: Pub. in The Jnl. of Geophysical Research, v81 n27 p4983-4990 20 Sep 76.

DESCRIPTORS: *Marine geophysics, *Ocean bottom, Boundary layer, Deep oceans, Salinity, Temperature, Profiles, North Atlantic Ocean, Mixing, Reprints (U)
IDENTIFIERS: Hatteras Abyssal Plain, Mixed layers, WUNR083004 (U)

Some aspects of the bottom boundary layer of the deep ocean are exhibited in profiles of salinity and temperature made with a Woods Hole Oceanographic Institution/Brown CTD microprofiler. Profiles from the center of the Hatteras Abyssal Plain have a signature that is characteristic of mixing up a uniformly stratified region. Over rough or sloping topography, to the east and west of the abyssal plain, the profiles have more complicated structure. All profiles show a well-mixed layer above the bottom; the penetration height of the layer varies from about 10 to 100 m and is correlated with the one-day mean velocity, inferred from current meters located above the bottom boundary layer. Over the Hatteras Abyssal Plain the Mixed layer extends above the bottom about 6 times the turbulent Ekman layer height. Over rough and sloping topography the penetration height is between the Ekman layer height and the height observed on the flat abyssal plain. (Author) (U)

AD-A032 057 8/3
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Evidence of Subarctic Water Mass Intrusions at Ocean Weather Station November. (U)

DESCRIPTIVE NOTE: Final rept. 1 Jul 75-30 Jun 76,
SEP 76 52P Pfeiffer,John Francis ; Bourke,Robert H. ;
REPT. NO. NPS-68BF76091

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Master's thesis.

DESCRIPTORS: *Marine geophysics, *North Pacific Ocean, Arctic Ocean, Mixtures, Advection, Heat flux, Heat balance, Heat transfer, Air water interactions, Vertical orientation, Horizontal orientation, Layers, Gradients, Sea water, Salinity, Computations, Seasonal variations, Equations, Oceanographic data, Weather stations (U)
IDENTIFIERS: Ocean Weather Station NOVEMBER (U)

A divergent heat budget equation which included the effects of surface heat flux, horizontal and vertical advection, and horizontal divergence on the near-surface heat content was used to examine the role of thermal advection in the upper 250m of the water column at Ocean Weather Station NOVEMBER. This station is located on the southern boundary of the transition zone separating the Subarctic water mass from the Subtropic water mass. Values for horizontal thermal advection changes were computed over the period 1962-1970. This term was correlated with salinity fluctuations over the period 1968-1970. Pulse-like periods of cool advection were associated with periods of reduced salinities suggesting these were intrusions of Subarctic water. Over the nine-year period of analysis, these intrusions had a periodicity of 7 to 8 months with a duration of 3 to 4.5 months. It is suggested these wave-like intrusions along the Subtropic front are the result of the passage of non-dispersive baroclinic Rossby waves. (Author) (U)

AD-A032 056 8/3 8/12 20/1
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Oceanography, Mesostructure, and Currents of the Pacific Marginal Sea-Ice Zone - MIZPAC 75. (U)

DESCRIPTIVE NOTE: Final rept. 1 Jul 75-30 Jun 76, SEP 76 197P Zuberbuhler,William John ; Roeder,John Alexander ;Paquette,Robert G. ; Bourke,Robert H. ;
REPT. NO. NPS-58PA76091
PROJ: F52555
TASK: ZF5255501Z

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Master's thesis.

DESCRIPTORS: *Ocean currents, *Sea ice, *Chukchi Sea, Sea water, Electrical conductivity, Temperature, Salinity, Depth, Microstructure, Temperature inversion, Diffusion, Circulation, Thermal properties, Ice, Edges, Open water, Oceanographic data, Thermoclines, Melting, Arctic Ocean, Flowmeters, Bathythermograph data, Underwater sound, Sound transmission, Acoustic velocity, Perturbations, Theses (U)
IDENTIFIERS: MIZPAC 75 project, Oceanic structure, Ocean circulation, Marginal sea ice zones, Ice floes, Double diffusion, Mesostructure(Oceanography), WU9024909, PE62759N (U)

Currents and complex temperature inversions observed in the Chukchi Sea during MIZPAC 75 were investigated in an effort to define the mechanisms for the formation of mesostructure. Data was collected using a conductivity-temperature-depth recorder and a Savonius rotor current meter. Whereas in previous MIZPAC cruises mesostructure was typically observed in the vicinity of ice margins, during MIZPAC 75 it was primarily found in regions of diffuse ice floes and in the open water ice-melt region up to 96 km south of the ice margin. The nature of the mesostructure varied fairly systematically with ice diffuseness and distance from the ice margin. There was little correlation of mesostructure with current direction but a possible correlation with current strength. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0MO7

AD-A031 858 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

A Compilation of Moored Current Data and Associated Oceanographic Observations. Volume X. (Early 1969 Measurements). (U)

DESCRIPTIVE NOTE: Technical rept., MAY 76 120P Tarbell,Susan A. ;
REPT. NO. WHOI-76-40
CONTRACT: N00014-66-C-0241, N00014-76-C-0197

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 9, AD-A022 552.

DESCRIPTORS: *Ocean currents, *Oceanographic data, *North Atlantic Ocean, Mediterranean Sea, Wind, Flowmeters, Anemometers, Mooring, Directional, Sea water, Temperature, Salinity, Gulf stream (U)

Summaries of wind and current measurements from moored stations gathered by magnetic tape recording current meters and wind recorders in early 1969 are presented also selected hydrostation data from the same areas. Averaged wind and current quantities are presented in computer generated output as basic statistics, spectra diagrams, progressive vector diagrams and east-north component plots. The hydrostation data are presented as temperature and salinity values plotted against pressure. The data collected in 1969 were gathered from four different sites: the Mediterranean Sea, the Gulf Stream, Site L and Site D. Mooring 289 was set in the Mediterranean at 38 deg 01'N, 04 deg 59.9'E; moorings 304 and 305 were Gulf Stream moorings at 36 deg 23.4'N, 70 deg 00.2'W and 36 deg 43'N, 70 deg 00.3'W respectively. Mooring 314 was set at Site L at 34 deg 02.7'N, 70 deg 02'W. The rest of the data were collected from moorings set in the vicinity of Site D, 39 deg 10'N, 70 deg 00'W. This report presents data from the first part of 1969 only. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A031 347 20/6 8/10 4/1
NAVAL INTELLIGENCE SUPPORT CENTER WASHINGTON D C
TRANSLATION DIV

Optics of the Ocean and Atmosphere, (U)

JUL 76 37P Shifrin,K. S. ;
REPT. NO. NISC-Trans-3824

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. of mono. Optika Okeana i Atmosfery, Leningrad, 1972 p4-24, 113-125, 181-187.

DESCRIPTORS: *Oceanography, *Atmospheres, *Light transmission, Underwater light, Oceanographic equipment, Optical instruments, Sea water, Pacific Ocean, Translations, USSR (U)
IDENTIFIERS: Atmospheric transmissivity (U)

;Contents: Basic relationships between hydrooptical characteristics--parameters of the light field in the sea and hydrooptical characteristics; Objective hydrospectronephelometer for in situ measurements of optical characteristics of seawater; Two methods of measuring spectral coefficients of light transmission through seawater layers of considerable thickness; Classification of Pacific Ocean waters according to transparency. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A030 668 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Spreading of Antarctic Bottom Water and its Effects on the Floor of the Indian Ocean Inferred from Bottom-Water Potential Temperature, Turbidity, and Sea-Floor Photography. (U)

DESCRIPTIVE NOTE: Journal article,
AUG 75 19P Kolla,Venkatarathnam ;
Sullivan,Lawrence ;Streeter,S. Stephen ;
Langseth,Marcus G. ;
REPT. NO. LDGO-2328
CONTRACT: N00014-75-C-0210, N00014-67-A-0108-0004
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Marine Geology, v21 p171-189 1976.

DESCRIPTORS: *Antarctic regions, *Indian ocean, *Ocean bottom, Sea water, Temperature, Turbidity, Ocean currents, Reprints (U)
IDENTIFIERS: *Bottom water, *Antarctic Ocean (U)

Data on bottom-water potential temperature, turbidity and current indications show that in the Southern Ocean west of the Kerguelen Plateau, Antarctic Bottom Water (AABW) of Weddell Sea origin spreads northwards from the Atlantic-Indian Basin in two directions: (1) AABW enters the Agulhas Basin through relatively deep areas in the Mid-Indian Ridge at 20-25 deg E and possibly at 35 deg E, and flows northwards into the Mozambique Basin as far as its northern limits; (2) a more easterly spreading path extends from the Atlantic-Indian Basin through the Crozet into the Madagascar, Mascarene, Somali and Arabian Basins. (U)

AD-A030 625 8/3 8/10 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Recent Bottom-Current Activity in the Deep Western Bay of Bengal. (U)

DESCRIPTIVE NOTE: Journal article,
JAN 76 17P Kolla,Venkatarathnam ;Moore, David G. ;Curray,Joseph R. ;
REPT. NO. LDGO-2359
CONTRACT: N00014-75-C-0210, N00014-67-A-0108-0004
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Marine Geology, v21 p255-270 1976.

DESCRIPTORS: *Ocean currents, *Indian ocean, *Ocean bottom soils, Marine geology, Ocean bottom topography, Sedimentation, Turbidity currents, Seafloor spreading, Reprints (U)
IDENTIFIERS: *Bay of Bengal, *Ocean bottom currents, Seafloor photographs (U)

Several types of data are presented which show that strong geostrophic bottom currents are present in a broad valley in the deep western Bay of Bengal adjacent to the Indian margin. Sea-floor photographs show well-developed current lineations with scour marks on the northern sides and sediment deposition tails on the southern sides of some objects (such as fecal pellets) suggesting strong southward-flowing bottom currents. A direct current measurement made in the region confirms this inferred flow direction. The nepheloid layer is much stronger in the western Bay of Bengal than in any other region of the northern Indian Ocean and indicates strong turbulence and a high concentration of suspended sediment at or near the sea floor. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A030 517 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF GEOLOGICAL RESEARCH DIV

Possible Rip Current Origin for Bottom Ripple Zones to 30-m Depth, (U)

FEB 76 8P Reimnitz,Erk ;Toimil, Lawrence J. ;Shepard,Francis P. ;Gutierrez-Estrada,Mario ;
CONTRACT: N00014-75-C-0152, Nonr-2216(23)

UNCLASSIFIED REPORT
Availability: Pub. in Geology, v4 p395-400 1976.

DESCRIPTORS: *Ocean currents, *Ocean bottom, *Ripples, Pacific Ocean, Beaches, Sedimentation, Coastal regions, Scanning sonar, Reprints (U)
IDENTIFIERS: Rip currents (U)

Side-scan sonar records along the moderate- to high energy Pacific Coast of Mexico show ripple-marked bands normal to the surf. These bands have been traced as far seaward as 1,500m from the beach in water as deep as 30m. There is strong evidence that these ripple bands are produced by rip currents. Earlier studies suggested that rip currents do not extend to the bottom beyond the breaker zone. Our interpretations indicate that rip currents-probably those that develop under severe wave conditions-transport sediment, shape the bottom, and produce internal sedimentary structures much farther seaward than was previously believed. (Author) (U)

AD-A030 384 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Particulate Matter Sinking to the Deep-Sea Floor at 2000 M in the Tongue of the Ocean, Bahamas, with a Description of a New Sedimentation Trap. (U)

DESCRIPTIVE NOTE: Technical rept., OCT 75 18P Wiebe,Peter H. ;Boyd, Steven H. ;Winget,Clifford ;
REPT. NO. WHOI-Contrib-3602, WHOI-76-85
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT

Availability: Pub. in Jnl. of Marine Research, v34 n3 p341-354 1976.

DESCRIPTORS: *Ocean bottom sampling, *Ocean bottom topography, *Deep oceans, *Tongue of the ocean, Sedimentation, Particulates, Organic materials, Filters, Reprints (U)
IDENTIFIERS: Sedimentation trap (U)

A sedimentation trap for use just above the deep-sea floor was free-fallen to a depth of 2050 m in the Tongue of the Ocean canyon on January 3, 1974. On March 6, it was successfully recovered with the assistance of D.S.R.V. Alvin. The trap has a base 1 m square and a height of 30 cm. At the trap bottom are filters to retain falling particles. Two spring-powered sliding doors, each 1 m x 0.5 m, are used to close off the lower 2 cm of the trap during ascent to prevent disturbance of the particles collected on the filters. Comparison of the sedimentation trap estimates of organic carbon input to the sea floor in this area with benthic energy requirements indicates that rapidly sinking small particulate matter could supply approximately 14% of the metabolic requirements of the benthos. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A030 362 8/12
RAND CORP SANTA MONICA CALIF

Sea-Ice Conditions in the Norwegian, Barents, and White Seas. (U)

DESCRIPTIVE NOTE: Interim rept., AUG 76 42P Batten,E. S. ;
REPT. NO. R-1921-ARPA
CONTRACT: DAHC15-73-C-0181, ARPA Order-189

UNCLASSIFIED REPORT

DESCRIPTORS: *Sea ice, *Barents Sea, *Norwegian Sea, *White Sea, Climate, Military applications, Military geography, Arctic regions, Ice formation, Navigational aids, Policies, USSR, Pack ice (U)
IDENTIFIERS: Ice thickness (U)

An investigation of the possible effects of climatic change on the military posture of the United States and the Soviet Union is presented. The problem is to estimate worsening sea-ice conditions in the Norwegian, Barents, and White seas in the event of a climatic cooling during the next few decades. Future climatic conditions assumed for this study approximate the severe winters experienced during the Little Ice Age from the Mid-1400s to the mid-1800s. A period of cooling in the polar regions implies a worsening of sea-ice conditions in the Arctic seas producing increased hazards to navigation. The author concludes that for a climatic state similar to the Little Ice Age, the Norwegian and Barents seas would remain open to navigation. Within the White Sea, however, under extreme conditions the duration of the ice season would lengthen to about 8 months, with maximum ice thickness reaching 70 in. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A030 360 8/3 8/10
DEFENCE RESEARCH ESTABLISHMENT OTTAWA (ONTARIO)

An Oceanographic Survey of Fury and Hecla Strait. (U)

DESCRIPTIVE NOTE: Technical note,
MAY 76 46P Serson,Harold V. ;
REPT. NO. DREO-76-14

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Abstract in French.

DESCRIPTORS: *Tidal currents, *Oceanographic equipment, *Oceanographic data, Straits, Arctic Ocean, Surveys, Temperature, Salinity, Canada (U)
IDENTIFIERS: Fury Strait, Hecla Strait, Oceanographic stations, Hydrocasts (U)

A total of 27 days of current and tide data and the results of 13 oceanographic stations obtained in Fury and Hecla Strait and its approaches are presented and an attempt made to explain some of the observed characteristics of these waters. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A030 119 8/3 8/10
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

On the Flow through Barrow Canyon. (U)

DESCRIPTIVE NOTE: Technical rept.,
DEC 75 13P Mountain,David G. ;Coachman, L. K. ;Aagaard,Knut ;
REPT. NO. TR-16, Contrib-893
CONTRACT: N00014-75-C-0893, N00014-67-A-0103-0014
PROJ: NR-307-326

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Physical Oceanography, v6 n4 p461-470 Jul 76.

DESCRIPTORS: *Ocean currents, *Arctic Ocean, *Beaufort Sea, *Chukchi Sea, Flow rate, Velocity, Measurement, Temperature, Hydrostatic pressure, Oceanographic data, Reprints (U)
IDENTIFIERS: Barrow canyon (U)

Simultaneous current and temperature measurements were made at two depths in Barrow Canyon for a period of 120 days from April through August, 1973. The mean of the measured currents was 25 cm s(-1)toward the northeast, such that water moved out of the canyon from the Chukchi Sea toward the Arctic Ocean. The measurements, however, are characterized by higher speeds, commonly in excess of 50 cm s(-1), and large variations which resulted in periods of reversed (southwest) up-canyon motion. During these reversed flow periods increased temperatures indicate the presence in the canyon at 126 m depth of Atlantic Water from 200-300 m depth in the Arctic Ocean. A close relationship exists between the measured currents and the north-south atmospheric pressure gradient, such that when the pressure rose to the north, the northward flow of water through the canyon decreased. A simple dynamic model is presented to account for the observed current-pressure relationship. (U)

AD-A030 097 8/10 9/2
OREGON STATE UNIV CORVALLIS SCHOOL OF OCEANOGRAPHY

Settling Tubes for Size Analysis of Fine and Coarse Fractions of Oceanic Sediments. (U)

DESCRIPTIVE NOTE: Technical rept., JUN 76 95P
Thiede,J. ;Chriss,T. ; Clauson,M. ;Swift,S. A. ;
REPT. NO. Ref-76-8
CONTRACT: N00014-67-A-0369-0007
PROJ: NR-083-102

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean bottom, *Sediments, *Ocean bottom sampling, Silt, Sand, Grain size, Data processing, Computer programs, Oceanographic data (U)
IDENTIFIERS: Pelagic sediments, Settling tubes, Strip chart recorders (U)

Instrumentation for rapid, high precision size analysis of silt and sand size particles has been acquired and/or developed by the marine geology group of the School of Oceanography of Oregon State University. A Cahn automatic electrobalance with particle sedimentation accessories is used for size analysis of the silt fraction of pelagic sediment; a large diameter settling tube developed at Oregon State University is used for analysis of the sand size fraction. The data generated with these systems are recorded by a strip chart recorder as well as by a high speed paper tape punch. Computer programs to deal with large volumes of data and to calculate various size parameters for each sample have been developed for this instrumentation and are documented in this report. Instrumentation has also been developed to permit specific size fractions to be separated from the bulk sediment to allow compositional studies of the different size modes. All documentation necessary to understand this instrumentation system is presented in this report, and thus is available to all students interested in textural classifications of pelagic sediments. (Author) (U)

AD-A030 040 4/2 8/3
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Climatological Wave Statistics Derived from FNWC Synoptic Spectra Wave Analyses. (U)

DESCRIPTIVE NOTE: Final rept. Jan-Jul 76, JUN 76 139P
Reynolds,Felix Michael ; Thompson,Warren C. ;
REPT. NO. NPS-58ReTh76061

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Master's thesis.

DESCRIPTORS: *Marine climatology, *Ocean waves, Ocean models, Weather forecasting, Sea states, Power spectra, Deep water, Energy levels, Wind velocity, Seasonal variations, Frequency bands, Two dimensional, One dimensional flow, Computations, North Pacific Ocean (U)
IDENTIFIERS: *Spectral Ocean wave model, SOWM(Spectral Ocean Wave Model) (U)

A summer and winter month of 12-hourly synoptic spectral wave analyses produced by the Fleet Numerical Weather Central, Monterey, California were used to develop three experimental wave climatology formats for a point in the Gulf of Alaska; the analyses were produced by the Spectral Ocean Wave Model at FNWC which computes the wave energy contained in 12 direction bands and 15 frequency bands for a grid point array in the Northern Hemisphere oceans. The gross climatology format displays frequency of occurrence of significant wave height by period and direction, but does not differentiate between sea and swell. The two-dimensional spectral climatology format is a tabulation of the frequency of occurrence of spectral energy in various frequency and direction bands. The one-dimensional spectral format displays the distribution of spectral wave energy over various frequency bands but contains no directional information. Both of the spectral formats appear to have their greatest potential application in resonance response of floating and fixed structures. (Author) (U)

AD-A030 000 4/2 8/3
NAVAL ENVIRONMENTAL PREDICTION RESEARCH FACILITY MONTEREY CALIF

Catalog of Technical Publications Produced by Naval Environmental Prediction Research Facility. Supplement Number 1. (U)

AUG 76 50P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-A018 718.

DESCRIPTORS: *Marine meteorology, *Oceanography, *Bibliographies, Sea states, Wind velocity, Ocean waves, North Pacific Ocean, Harbors, Naval vessels, Protection, Marine climatology, Meteorological satellites, Tropical cyclones, Typhoons, Catalogs, Weather forecasting, Data bases, Japan, Philippines, South Korea, Fog dispersal, Seeding, Cloud cover (U)

This supplement comprises NAVENVPREDRSCHFAC technical publications produced and distributed during the period July 1975 through June 1976. (U)

AD-A029 470 8/4
HAWAII INST OF GEOPHYSICS HONOLULU

Trace Element Geochemistry of Biogenic Sediments from the Western Equatorial Pacific, (U)

JUN 74 9P Burnett,William C. ;
REPT. NO. HIG-Contrib-590
CONTRACT: N00014-70-A-0016-0001

UNCLASSIFIED REPORT
Availability: Pub. in Pacific Science, v29 n2 p219-225 1975.

DESCRIPTORS: *Geochemistry, *Trace elements, *Ocean bottom soils, *Sediments, *Pacific Ocean, *Equatorial regions, Ocean bottom, Minerals, Metals, Transition metals, Alkaline earth metals, Reprints (U)
IDENTIFIERS: Biogenic sediments (U)

Twenty-seven surface samples of biogenic sediment, including radiolarian, nannofossil, and foraminiferal oozes from the Western Equatorial Pacific have been analyzed for potassium, magnesium, iron, rubidium, strontium, barium, chromium, cobalt, nickel, copper, and zinc by rapid instrumental techniques. Interelement associations have been evaluated with the use of a computer-compiled matrix of correlation coefficients. The variables considered include elemental determinations, water depth, and percentage of calcium carbonate. The associations calcium carbonate:strontium, potassium:rubidium, and barium:nickel:copper may all be explained with regard to their mode of entry into the sediment. The data indicate that organic fixation of metals is a significant process during the deposition of Pacific Equatorial sediments, whereas contributions from other sources, i.e., sorbed cations on the surfaces of clays and coprecipitation with iron or manganese oxides, are effectively masked in most cases by high rates of biogenous deposition. (Author) (U)

AD-A029 465 8/10
COAST GUARD WASHINGTON D C OCEANOGRAPHIC UNIT

Oceanographic Observations, North Atlantic Ocean Station Delta, 26 August 1968-26 August 1969. (U)

DESCRIPTIVE NOTE: Oceanographic rept., FEB 76 219P Hannon,Lawrence J. ;
REPT. NO. USCG-373-69

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *North Atlantic Ocean, Temperature, Salinity, Anomalies, Bathythermograph data, Deep water, Oceanographic ships (U)
IDENTIFIERS: DELTA Ocean Station, WHEC 718 vessel (U)

Oceanographic data from fifteen cruises on Ocean Station DELTA (44 degrees N, 41 degrees W) during the period August 1968 to August 1969 are presented. These data consist of observed and interpolated temperatures and salinities from 257 shallow and 11 deep casts. Analysis of the data on OS DELTA indicates that the North Atlantic Current intrudes on OS DELTA during most of the year. Temperature-salinity (T-S) curves and salinity anomaly analysis are given. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0MO7

AD-A029 358 8/3
COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER N H

Baseline Data on the Oceanography of Cook Inlet, Alaska. (U)

JUL 76 95P Gatto,Lawrence W. ;
REPT. NO. CRREL-76-25
CONTRACT: NASA-W-13452
PROJ: SR/T-160-75-89-02-10

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Inlets(Waterways), *Alaska, Data acquisition, Salinity, Surface temperature, Bathymetry, Sediments, Tides, Distribution, Flow rate, Turbulent flow, Coriolis effect, Seasonal variations, Aerial photography, Scientific satellites, Photointerpretation (U)
IDENTIFIERS: *Cook inlet(Alaska) (U)

The primary objective of this investigation was to compile baseline information pertaining to the ocean circulation, especially the extent and patterns of tidal currents and tidal flushing, in Cook Inlet, Alaska, utilizing aircraft and satellite imagery with corroborative ground truth data. LANDSAT-1 and NOAA-2 and -3 imagery provided repetitive, synoptic views of surface currents, water mass migration and sediment distribution during different seasons and tides. Color, color infrared and thermal infrared imagery acquired on 22 July 1972 with the NASA NP-3A aircraft were used to analyze currents, mixing patterns and sediment dispersion in selected areas. Temperature(C), salinity (0/00) and suspended sediment concentration (mg/l) data and hand-held photography were utilized as ground truth information in the interpretation of the aircraft and satellite imagery. Coriolis effect, semidiurnal tides and the Alaska current govern the estuary circulation. Clear, oceanic water enters the inlet on the southeast during flood tide, progresses northward along the east shore with minor lateral mixing, and remains a distinct water mass to the latitude of Kasilof-Ninilchik. South of the forelands, mixing with turbid inlet water becomes extensive. (U)

AD-A029 248 8/3
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

Greenland Sea Studies. Part IV. (U)

DESCRIPTIVE NOTE: Final Technical rept. 1 Jun 71-31 May 73,
AUG 76 157P Aagaard,Knut ;
REPT. NO. Ref-M76-66
CONTRACT: N00014-67-A-0103-0023
PROJ: NR-307-342

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Doctoral thesis.

DESCRIPTORS: *Ocean currents, *Greenland Sea, Heat flux, Tides, Velocity, Sea ice, Power spectra, Seasonal variations, Drogue parachutes, Wind velocity, Oceanographic data, Field conditions, Theses (U)
IDENTIFIERS: West Spitsbergen current (U)

The West Spitsbergen Current flows north through the eastern Greenland Sea. The Greenland Sea is in turn the major avenue of exchange of mass and of thermal and kinetic energy between the Arctic Ocean and the rest of the world ocean. The flow through Bering Strait into the Arctic Basin is about 1.5 Sv (1 Sv = 1,000,000 cu m/sec) and < 1 Sv flows in through the Barents Sea, while about 2 Sv exit through the Canadian Archipelago. In contrast, the transport through the Greenland-Spitsbergen passage is about 7 Sv in each direction. In addition to the transport of heat and mass by the mean flow, much of the tidal energy in the Arctic Ocean enters through the Greenland-Spitsbergen passage. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0MO7

AD-A029 140 4/2
COMMONWEALTH WEATHER CORP NORFOLK VA

Reading 500 Millibar Flow Patterns in Relation to Surface Weather Developments with Special Emphasis on Forecasting for the Mediterranean and Adjoining Areas. (U)

DESCRIPTIVE NOTE: Final rept.,
JUL 76 122P Wobus,Hermann B. ;Smith, James E. ;McLean,James C. , Jr;
CONTRACT: N00014-75-C-1061

UNCLASSIFIED REPORT

DESCRIPTORS: *Marine meteorology, *Weather forecasting, *Mediterranean Sea, *North Atlantic Ocean, Synoptic meteorology, Patterns, Meteorological phenomena, Atmospheric disturbances, Surface roughness, Air water interactions, Western Europe (U)

This is a synoptic presentation using qualitative trajectory and/or airstream analysis at the 500 millibar level as a means of interpreting the sequence of events associated with pattern transition and inter-system disturbance at the synoptic scale. Emphasis is given to application in the area of western Europe, the Mediterranean, and adjoining portions of the Atlantic Ocean. (U)

AD-A029 109 8/10 8/11
HAWAII INST OF GEOPHYSICS HONOLULU

The Seismic Wide Angle Reflection Method in the Study of Ocean Sediment Velocity Structure, (U)

74 31P Maynard,G. L. ;Sutton,G. H. ;Hussong,D. M. ;Kroenke,L. W. ;
REPT. NO. HIG-Contrib-587
CONTRACT: Nonr-3748(05), N00014-70-A-0016-0001
PROJ: NR-083-603

UNCLASSIFIED REPORT
Availability: Pub. in Physics of Sound in Marine Sediments, p89-117 1974.

DESCRIPTORS: *Ocean bottom soils, *Sediments, *Seismology, Marine geology, Reflection, Ocean bottom, Sound ranging, Reprints (U)
IDENTIFIERS: Wide angle reflection (U)

Although the wide angle reflection method was little used in the oceans, a well-developed mathematical theory and techniques for determining interval velocities within plane layers by this method existed for 20 years. The raypaths are least-time paths. Reflection curves from interfaces below the ocean floor are generally not true hyperbolas but are higher order functions forming curved lines on a T square-X square plot. Certain properties and limiting cases of reflection curves allow the computation of interval velocities both by exact and by highly useful approximate methods. These methods place stringent demands upon data quality, and to provide adequate data precision the ASPER (Airgun-Sonobuoy-Precision Echo Recorder) method was developed. The high data density provided by this method allows comparison of long segments of observational travel time curves with theoretical travel time curves appropriate for various physical/geological models. The method has several limitations; for example, it requires relatively simple, uniform geologic structure, and in deep water (2 km or more) velocities are only determined to about the nearest 0.1 km/sec, or even more if vertical intervals much smaller than 200 m are used. It is sometimes useful to find a regional velocity-depth function by combining the results of several sections determined in the area. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A029 101 8/3 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

The Interaction of Zonal Currents with Topography with Applications to the Southern Ocean. (U)

DESCRIPTIVE NOTE: Technical rept.,
MAR 75 20P McCartney,M. S. ;
REPT. NO. WHOI-Contrib-3539, WHOI-76-76
CONTRACT: N00014-74-C-0262, NSF-GA-35447
PROJ: NR-083-004

UNCLASSIFIED REPORT
Availability: Pub. in Deep-Sea Research, v23 p413-427 1976.

DESCRIPTORS: *Internal waves, *Ocean bottom topography, *Ocean ridges, South Pacific Ocean, South Atlantic Ocean, Reprints (U)
IDENTIFIERS: Zonal currents, Baroclinic currents, Taylor column (U)

An analytical model for the interaction of a broad, eastward baroclinic current with shallow topographic features in an unbounded Beta-plane ocean is developed and solved for three types of topography: a meridionally oriented ridge as is found in the central South Pacific and South Atlantic sectors of the Southern Ocean, a zonally oriented ridge as is found south of Australia and Africa, and an isolated plateau or seamount. The meridional ridge causes a stationary wave pattern similar to that believed to occur in the southeast Pacific Ocean. The zonal ridge causes a current intensification on the equatorward side of the ridge crest, with intermittent slowed or reversed flow and a string of stationary warm core eddies on the poleward side. (U)

AD-A029 002 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Early April Observations of Northeast Pacific Transition Zone Prior to the 1976 Albacore Fishing Season, (U)

JUL 76 12P Saur,J. F. T. ;
CONTRACT: N00014-75-C-0152

UNCLASSIFIED REPORT
Availability: Pub. in Fishing Information, n4 p3-18 1976.

DESCRIPTORS: *Bathythermograph data, *North Pacific Ocean, *Transition temperature, *Salinity, Ocean currents, Fishes, Fisheries, Industrial research, Reprints (U)
IDENTIFIERS: Albacore fishing season, Fishing information (U)

The purpose of this note is to describe certain early April 1976 oceanic conditions in the northeast Pacific Ocean with relation to the character of the transition zone, which lies between the California Current and eastern North Pacific central waters. In previous years certain oceanic features have persisted into mid-summer and often throughout the summer into October-November. Thus they tend to indicate oceanic conditions to be expected during the Albacore fishing season. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A028 760 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Profiles in Velocity and Temperature near the Indian Ocean Equator, (U)

JUN 76 101P Knox,R. A. ;McPhaden,M. J. ;
REPT. NO. SIO-Ref-76-11
CONTRACT: N00014-75-C-0152

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Bathythermograph data, Maldive Islands, Atolls, Equatorial regions, Sea water, Indian Ocean, Directional, Velocity, Temperature, Surface temperature, Profiles, Vertical orientation, Depth, Flowmeters, Wind (U)
IDENTIFIERS: Wind stress, Addu Atoll, Gan Island (U)

Between January 1973 and May 1975, quasi-weekly vertical profiles of temperature and velocity were obtained near the equatorial island of Gan (00 deg 41 min S, 73 deg 10 min E) in the Central Indian Ocean. This report presents the profiles directly. One analysis of the data, treating the seasonal cycle of near-surface currents, has been published; others are in progress. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A028 718 8/3
NAVAL INTELLIGENCE SUPPORT CENTER WASHINGTON D C
TRANSLATION DIV

Internal Waves in the Open Part of the Southwestern North Atlantic (Vnutrennie Volny v Otkrytoi Chasti Yugo-Zapada Severnoi Atlantiki), (U)

JUN 76 14P Belyakov,Yu. M. ;Belyakova, O. M. ;
REPT. NO. NISC-Trans-3820

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. of Akademiya Nauk URSR, Kiev. Morskyi Hidrofizychnyi Institut. Trudy, n2 (58) p106-119 1970.

DESCRIPTORS: *Ocean waves, *Internal waves, *North Atlantic Ocean, Oscillation, Periodic variations, Oceanographic data, Distribution, Sargasso Sea, Tides, Mixing, Translations, USSR (U)

The article uses mainly data from many-day station 529, located in the central part of the Sargasso Sea. Four groups of internal wave periods in the 100-1000 m layer were determined: 11-13, 16-18, 22-26, and 33-45 h. The dominant components were found to be oscillations with periods of 33-45 and 11-13 h. A regular pattern was observed in the change of the character of tidal waves with depth, this being of essential importance in calculations of mixing caused by internal waves. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A028 717 8/3
NAVAL INTELLIGENCE SUPPORT CENTER WASHINGTON D C
TRANSLATION DIV

Experimental Studies of Turbulence in the Ocean (Eksperimentalnye Issledovaniya Turbulentnosti v Okeane), (U)

JUN 76 22P Kilesnikov,A. G. ;Panteleev, N. A. ;
REPT. NO. NISC-Trans-3822

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. of Akademiya Nauk URSR, Kiev. Morskyi Hidrofizychnyi Institut. Trudy, n2 (58) p151-173 1972.

DESCRIPTORS: *Turbulence, *Oceanographic data, *Ocean currents, Temperature, Salinity, Ocean surface, Coastal regions, Deep water, Measurement, Translations, USSR (U)

Some results of experimental studies of turbulence in the ocean are briefly presented. Basic information on the automated measuring instruments employed, i.e., deep-water autonomous turbulence meters, developed at the Marine Hydrophysical Institute of the Ukrainian Academy of Sciences (MHI UAS) is reported. (U)

AD-A028 085 4/2 8/3 8/6
CALIFORNIA UNIV LOS ANGELES DEPT OF ATMOSPHERIC SCIENCES

Two-Month Oscillation of Geopotential Height and Wind in the Tropic Pacific and Large-Scale Tropospheric Response to Anomalous Tropical Sea-Surface Temperatures during the Winters of 1962-66. (U)

DESCRIPTIVE NOTE: Final rept. (Volume 1), Dec 72-Jun 76,
JUN 76 77P Lee,Tan-Na ;Boucher,Donald J. , Jr;
CONTRACT: N00014-75-C-0262
PROJ: NR-083-287

UNCLASSIFIED REPORT

DESCRIPTORS: *Marine meteorology, *Tropical regions, *Air water interactions, *South Pacific Ocean, Equatorial regions, Ocean surface, Temperature, Canton Island, Geopotential, Wind, Atmospheric motion, Seasonal variations, Winter (U)
IDENTIFIERS: Air-sea interaction, Tropical meteorology, Sea-surface temperature, Tropical winds, Zonal winds (U)

Spectral analysis of 1962-1963 daily rawinsonde data for Canton Island (3 S, 172 W) has revealed significant peaks in the geopotential height and zonal wind spectrum. A period of 57 days is observed for the geopotential oscillation and 50 days for that of the zonal wind. Both oscillations are confined to the lower and upper levels of the troposphere with the middle level (300-500 mb) acting as a 'buffer zone' (i.e. no significant peaks found in the middle level). Variations in sea-surface temperature from long-term means were found to have a pronounced effect on the amplitudes of the two month oscillation. Anomalously warm sea-surface temperatures intensify amplitudes of zonal and meridional winds along with the temperature wave. They will, however, reduce the geopotential height amplitude. Subsequent co-spectrum analysis of u and v components yields a strong negative peak at a period of two-months, indicating southward momentum transport. (U)

AD-A027 738 8/7
SCRIPPS INSTITUTION OF OCEANOGRAPHY SAN DIEGO CALIF MARINE PHYSICAL LAB

Erosion on the Line Islands Archipelagic Apron: Effect of Small-Scale Topographic Relief. (U)

DESCRIPTIVE NOTE: Summary rept.,
AUG 74 15P Normark,William R. ;Spiess, Fred N. ;
REPT. NO. MPL-U-59/73
CONTRACT: N00014-69-A-0200-6002, NSF-GA-31377
PROJ: NR-260-103

UNCLASSIFIED REPORT
Availability: Pub. in Geological Society of AMerica Bulletin, v87 p286-296 Feb 76.

DESCRIPTORS: *Marine geology, *Pacific Ocean Islands, Hawaii, Erosion, Sedimentation, Ocean Bottom, Echo ranging, Reprints (U)
IDENTIFIERS: Line Islands Archipelagic(Pacific Ocean) (U)

A small area (10 x 16 km) on the northeast flank of the Line Islands archipelagic apron was studied in detail, using a deep-towed geophysical instrumentation system. Along the southern edge of the area, a moat several kilometers wide and 30 m deep lies at the base of an east-trending seamount cresting 1,500 m above the sediment apron. Both surface-ship 3.5-kHz and deep tow 4-kHz reflection profiles show that much of the relief of this moat is the result of slower deposition of sediment (or the lack of deposition) in the upper part of the sediment apron. In marked contrast, another moat in the northern portion of the area has been eroded 90 m below the smooth surface of the surrounding apron. This irregularly shaped moat is more than 7 km in length, although the adjacent seapeak (175 m high) is only 1 km in diameters. The sediments on the floor itself are suggestive of a coarse lag deposit. Short-term (up to 9 days) current-meter records showed that the prevalent current was about 2 to 3 cm/sec from the northeast, with small tidal perturbations. The morphology of this deep, irregular feature suggests that it may have formed during episodes of intensified bottom-water flow from the west-northwest, (U)

AD-A027 332 12/1 8/3 4/2
OREGON STATE UNIV CORVALLIS SCHOOL OF OCEANOGRAPHY

Rotary Cross-Bispectra and Energy Transfer Functions between Non-Gaussian Vector Processes. I. Development and Example, (U)

MAR 74 11P Yao,Neng-Chun ;Neshyba, Steve ;Crew,Henry ;
REPT. NO. Ref-75-13
CONTRACT: N00014-67-A-0369-0007, NSF-GA-23015
PROJ: NR-083-102

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Physical Oceanography, v5 n1 p164-172 Jan 75.

DESCRIPTORS: *Transfer functions, *Oceanographic data, *Wind, Energy transfer, Spectrum analysis, Quadratic equations, Linear systems, Interactions, Reprints (U)
IDENTIFIERS: Random vector processes, Complex sets (U)

Bispectrum and cross-bispectrum analyses of the rotary components of stationary random vector processes are more easily interpreted than similar analyses of their scalar components, and have the advantage that the bispectral estimates are invariant to coordinate rotation. Application to some wind-ocean current data shows these to be non-Gaussian and subject to significant nonlinear coupling over a wide range of interacting triplets of rotary components. A set of complex-valued energy transfer functions are developed by which the magnitudes of the linear and quadratic interactions may be compared. (Author) (U)

AD-A027 216 8/10 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Mean TS Curves in the Pacific and Their Application to Dynamic Height Computations, (U)

APR 76 127P Wert,Richard T. ;Emery, William J. ;
REPT. NO. SIO-Ref-76-6
CONTRACT: N00014-75-C-0152

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanography, *Oceanographic data, *Salinity, *Thermoclines, *Curve fitting, North Pacific Ocean, Heat transfer, Distribution, Graphics, Standard deviation, Computations (U)
IDENTIFIERS: Water mass distribution (U)

Smoothed mean curves of temperature versus salinity are computed from all available hydrographic data for 10 deg squares in the Pacific between 20S and 40N. Together these curves provide information on the distribution of water masses. Graphs of the individual curves are presented which include the scatter of TS pairs and the standard deviation in salinity along each curve. Salinity at a temperature interval of 1 C is also given in tabular form for each curve. (Author) (U)

AD-A026 950 8/3 8/10 20/1 17/1
SACLANT ASW RESEARCH CENTRE LA SPEZIA (ITALY)

The Maltese Oceanic Front during Spring. (U)

DESCRIPTIVE NOTE: Memorandum rept., JUN 76 20P Johannessen,Ola M. ;
REPT. NO. SACLANTCEN-SM-88

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: NATO furnished.

DESCRIPTORS: *Oceanographic data, *Ocean currents, *Underwater sound, *Mediterranean Sea, Salinity, Temperature, Density, Acoustic velocity, Sound transmission, Upwelling, Wind, Measurement, Anomalies, Malta, Italy, NAIO (U)
IDENTIFIERS: FRONTS (U)

Detailed salinity, temperature, density, current, and sound-speed measurements were made across the oceanic frontal zone east of Malta during a ten-day period in May 1971. Upwelling and downwelling, comparable to movements in atmospheric fronts, was observed along the front, which was found to be geostrophically balanced. Wind changes were seen to change the frontal structure significantly. The sound-speed structure in the frontal zone was very complex, with secondary sound channels being associated with upwelling and downwelling. The position of the front was observed to be well correlated with that of the continental edge. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A026 873 20/1 8/10
NAVAL RESEARCH LAB WASHINGTON D C

Long-Range Propagation Experiment: Antigua-Newfoundland, May 1974. Procedures and Shipboard Data. NRL Operation 74-16-03. (U)

DESCRIPTIVE NOTE: Interim rept., JUN 76 188P Shaffer,J. D. ;Fitzgerald, R. M. ;Nutile,D. A. ;
REPT. NO. NRL-7978
PROJ: S01-64, XF52-552
TASK: S01-64201, XF52-552-701

UNCLASSIFIED REPORT

DESCRIPTORS: *Underwater sound, *Oceanographic data, *Transmission loss, *North Atlantic Ocean, Sea water, Temperature, Sound transmission, Bathymetry, Long range(Distance), Meteorological data, Salinity, Acoustic velocity, Variations, Ocean environments, Underwater sound generators, Ocean bottom topography, Experimental data, Shadows, Acoustic signals, Coherence, Very low frequency, Acoustic data, Tables(Data) (U)
IDENTIFIERS: *North American basin, Ocean basins (U)

In May 1974, a long-range acoustic propagation experiment was performed to measure propagation loss, signal fluctuations, signal coherence, and bathymetric shadowing. The experiment was conducted jointly under two NRL programs--the Very Low Frequency (VLF) Program and the Fluctuation Program. Procedures for conducting the experiment and the shipboard data obtained are reported here. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0MO7

AD-A026 819 8/10 8/3 7/2
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Calcium Carbonate Distribution in the Surface Sediments of the Indian Ocean. (U)

DESCRIPTIVE NOTE: Journal article,
JAN 75 14P Kolla,Venkatarathnam ;Be, Allan W. H. ;Biscaye,Pierre E. ;
REPT. NO. LDGO-2316
CONTRACT: N00014-75-C-0210, NSF-IDO-71-04204
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v81 n15 p2605-2616, 20 May 76.

DESCRIPTORS: *Chemical oceanography, *Sedimentation, *Indian Ocean, *Calcium compounds, *Carbonates, *Ocean surface, Distribution, Maps, Oceanographic data, Ocean bottom, Ocean currents, Reprints (U)
IDENTIFIERS: *Marine chemistry, *Calcium carbonates, Lysocline (U)

A comprehensive calcium carbonate map for the Indian Ocean surface sediments has been prepared from the analysis of about 1200 samples. The percent carbonate distribution shows the well-known first-order correlation with depth and hence reflects the physiographic peculiarities of the Indian Ocean. Thus on topographic highs such as most of the mid-Indian ridge, Ninety East ridge, etc. the carbonate is high (>75%), whereas in deep areas such as the Wharton, Central Indian, Madagascar, and Somali basins the carbonate is low (<10%). Dilutions by terrigenous debris are marked in the Bay of Bengal and Arabian Sea adjacent to the Indian subcontinent and in the Mozambique Basin off southeast Africa. When the regions with significant terrigenous dilutions are excluded, certain systematic latitudinal variations in the carbonate critical depth (CCrD, depth below which less than 10% CaCO3 is present) and carbonate lysocline (Depth at which a significant decrease in carbonate percent occurs) superimposed on the general first-order depth changes are evident. The CCrD is deepest in the equatorial region (10 N-10 S).

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0MO7

AD-A026 816 8/10 8/7
OREGON STATE UNIV CORVALLIS SCHOOL OF OCEANOGRAPHY

Compilation of Reprints. (U)

SEP 75 79P Blakely,Richard J. ; Yaomashiro,Chiye ;Pytkowicz,Ricardo M. ;Yao, Neng-chun ;Neshyba,Steve ;
REPT. NO. Ref-75-5, Ref-75-10
CONTRACT: N00014-67-A-0369-0007, N00014-68-A-0148
PROJ: NR-083-102, NR-083-230

UNCLASSIFIED REPORT
Availability: Pub. in various Jnls. 1975.
SUPPLEMENTARY NOTE: Includes rept. nos. Ref-75-11, Ref-75-13 and Ref-75-14.

DESCRIPTORS: *Oceanography, *Marine geology, Sea water, Seafloor spreading, Oceanographic data, Sediments, Foraminifera, Plankton, Dissolving, Carbonates, Sediment transport, Chemical oceanography, Geochemistry, Ocean currents, Spectrum analysis, Energy transfer, Transfer functions, Abyssal zones, Ocean ridges, Dunes, Sand, Reprints (U)
IDENTIFIERS: Ocean basins (U)

Contents: Evidence of Local Migration of a Spreading Center; Differentiating Dissolution and Transport Effects in Foraminiferal Sediments from the Panama Basin; Some Trends in Marine Chemistry and Geochemistry; Rotary Cross-Bispectra and Energy Transfer Functions Between Non-Gaussian Vector Progresses--I. Development and Example; and Abyssal Dunes of Foraminiferal Sand on the Carnegie Ridge. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A026 538 4/2
NAVAL WEATHER SERVICE COMMAND WASHINGTON D C

Climatic Summaries for Major Indian Ocean Ports and Waters. (U)

SEP 74 128P
REPT. NO. NAVAIR-50-1C-63

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Supplement to report dated Nov 73, AD-A026 537. Prepared by Naval Weather Service Detachment, Asheville, N.C.

DESCRIPTORS: *Climate, *Marine meteorology, *Indian Ocean, Marine terminals, Profiles, Meteorological charts, Atmospheric temperature, Wind velocity, Ocean surface, Surface temperature, Ocean waves, Fog, Atmospheric precipitation, Humidity, Thunderstorms, Storms, Barometric pressure, Seasonal variations, Coastal regions (U)

The environmental study was compiled at the request of the Commander in Chief, Pacific Fleet Meteorologist as a planning aid to Fleet scheduling personnel and as a general information source for Fleet commanding officers. The study covers the Area 32 degrees N to 32 degrees S from 30 degrees E to 80 degrees E and presents analyzed data in chart form, climatic profiles for selected coastal stations, and a general narrative of the climatology of the Area. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A026 537 4/2
NAVAL WEATHER SERVICE COMMAND WASHINGTON D C

Climatic Summaries for Major Seventh Fleet Ports and Waters, (U)

NOV 73 109P Ownbey,J. W. ;
REPT. NO. NAVAIR-50-1C-62

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared by Naval Weather Service Detachment, Asheville, N.C. See also AD-A026 538.

DESCRIPTORS: *Climate, *Marine meteorology, *Indian Ocean, *Japan Sea, *North Pacific Ocean, Marine terminals, Meteorological charts, Wind velocity, Atmospheric precipitation, Atmospheric temperature, Fog, Wind direction, Ocean surface, Surface temperature, Thunderstorms, Humidity, Storms, Barometric pressure, Seasonal variations, Coastal regions (U)

These climate summaries have been compiled at the request of the Seventh Fleet Meteorologist as a planning aid to assist fleet scheduling personnel, and as a general information source for Seventh Fleet commanding officers. The definite calendar limits of the seasons vary considerably over the Seventh Fleet area of operation. In the northern portion (Sea of Japan) the seasons are well defined into four distinct periods of winter, spring, summer and autumn; whereas, over the North Indian Ocean a wet and dry season characterizes the climatic cycle of a year. Included are a list of selected ports or nearby locations for which climatic profiles are given. (U)

AD-A026 494 20/4
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Vortex Generation by Oscillatory Flow Over Rippled Surfaces, (U)

JUL 74 12P Tunstall,Edward B. ;Inman, Douglas L. ;
CONTRACT: N00014-75-C-0300
PROJ: NR-388-127

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v80 n24 p3475-3484, 20 AUg 75.

DESCRIPTORS: *Hydrodynamics, *Ripples, *Ocean waves, Water waves, Vortices, Shores, Oscillation, Kinetic energy, Energy levels, Losses, Marine geophysics, Reprints (U)

Vortices generated by oscillatory flow over symmetrical sand ripples have been investigated in order to ascertain the amount of wave energy loss that can be attributed to the formation and movement of vortices. The experimental phase of the investigation centered around the flow visualization of the vortices over the ripples. These laboratory data were used to obtain values for three parameters (vortex size, circulation, and radius of the vortex core) needed to evaluate the amount of energy bound up in the vortex, the energy relationship being derived from a trapped vortex model. Comparison of the vortex kinetic energy loss attributed to bottom effects indicates that the vortices possess about 7% of the measured wave energy loss, the majority of the remaining energy loss being attributed to bottom shear. (Author) (U)

UNCLASSIFIED

AD-A026 481 8/3
RHODE ISLAND UNIV KINGSTON GRADUATE SCHOOL OF OCEANOGRAPHY

Observed Decay of a Cyclonic Gulf Stream Ring. (U)

SEP 74 13P Cheney,Robert E. ;
Richardson,Philip L. ;
CONTRACT: N00014-68-A-0215-0003

UNCLASSIFIED REPORT
Availability: Pub. in Deep-Sea Research, v23 p143-155 1976.

DESCRIPTORS: *Ocean currents, *Sargasso sea, *Gulf Stream, Sea water, Circulation, Rings, Dissipation, Life cycles, Decay, Equations of motion, Mixing, Potential energy, Thermal properties, Transport properties, Bathythermograph data, Reprints (U)
IDENTIFIERS: Cyclonic rings, Ocean circulation (U)

A cyclonic Gulf Stream ring was tracked in the western Sargasso Sea from March 1971 to April 1972. It moved 700 km southwest at 2 km/day and coalesced with the Gulf Stream off Cape Canaveral. During the first eight months the ring was in relatively deep water and available potential energy relative to 1000 m decayed at an estimated linear rate of 10 to the 21st power/day. The ring had a life expectancy of approximately 2-5 years. During the final three months it moved into shallower water and the decay rate accelerated more than fourfold. Layers of Sargasso Sea water inside the ring indicated mixing with surrounding water that may be the decay mechanism of the ring. (Author) (U)

AD-A026 418 8/3
FLORIDA STATE UNIV TALLAHASSEE DEPT OF OCEANOGRAPHY

A Western Boundary Current in the Gulf of Mexico. (U)

DESCRIPTIVE NOTE: Published paper,
DEC 75 5P Sturges,Wilton ;Blaha,John P. ;
REPT. NO. 143
CONTRACT: N00014-75-C-0201
PROJ: NR-083-231

UNCLASSIFIED REPORT
Availability: Pub. in Science, v192 p367-369, 23 Apr 76.

DESCRIPTORS: *Ocean currents, *Mexico Gulf, *Anticyclones, Boundaries, Coriolis effect, Wind, Reprints (U)
IDENTIFIERS: Western boundary currents, Boundary currents, Baroclinic flow, Wind stress curls (U)

The curl of the wind stress over the Gulf of Mexico, during the winter and again in the summer, is similar to that over the central North Atlantic Ocean. An anticyclonic gyre is nearly always found in the western gulf, and we suggest that there is a typical western boundary current, similar in many important respects to the Gulf Stream. The flow appears to be strongest in winter and summer, in phase with the wind curl forcing, and there is evidence that this response is at least partially baroclinic. The deep baroclinic gyre persists when the wind curl vanishes. The winter transport is roughly half that of the Florida Current. (Author) (U)

AD-A026 351 8/10
RHODE ISLAND UNIV KINGSTON GRADUATE SCHOOL OF OCEANOGRAPHY

R/V Trident Cruise Summaries CY 1972 through CY 1975. (U)

DESCRIPTIVE NOTE: Technical rept.,
JUN 76 175P Williams,Edwin McB. ; Ashraf,Asaf ;
REPT. NO. URI/GSO-Ref-76-2
CONTRACT: N00014-76-C-0226
PROJ: NR-083-165

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanography, North Atlantic Ocean, Caribbean Sea, Mexico Gulf, Gulf stream, Atlantic Ocean, Equatorial regions, Scientific research, Oceanographic ships, Universities, Rhode Island, Tables(Data) (U)
IDENTIFIERS: Trident vessel(Oceanography) (U)

This report was prepared by the Data Archives group at URI. It is a summary of the operations of the university's research vessel R/V TRIDENT for CY1972 through CY1975. For each calender year a listing of cruises is given followed by an Index chart Cruises have been summarized by: cruise number, dates, days at sea, funding, ang general area of operation. A program description and data collected are itemized. Scientific personnel and their affiliation on each cruise are listed. A cruise chart follows each cruise summary. (Author) (U)

AD-A026 212 8/3 8/10
ROSENSTIEL SCHOOL OF MARINE AND ATMOSPHERIC SCIENCE MIAMI FLA

Ocean Current Profile Measurements in the Western Mediterranean, USNS KANE Cruise 343601-II. (U)

APR 76 38P Duing,W. ;
REPT. NO. DR-76-3
CONTRACT: N62306-75-C-0084

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Mediterranean Sea, *Oceanographic data, Thermoclines, Vertical orientation, Oceanography, Ocean waves, Drift, Oceanographic equipment, Oceanographic ships (U)
IDENTIFIERS: Alboran sea, Profiling current meter, PCM(Profiling current meter) (U)

This data report is intended to document and provide graphic display of profiling current meter (PCM) data acquired by the USNS KANE on Cruise 34031, Leg II, sponsored by the Naval Oceanographic Office. The purpose of the cruise was to determine the vertical structure of horizontal velocity in the Western Mediterranean Sea. The operating area, known as the Alboran Sea, is east of the Straits of Gibralter between 35 deg 20'N and 36 deg 40'N latitude and between 2 deg 30'W and 5 deg 10'W longitude. The cruise began 1 August 1975 and ended 24 August 1975. In the area of investigation water flowing into the Mediterranean from the Atlantic overlies the nearly uniform Mediterranean water, which is flowing out over the sill at the bottom. PCM measurements indicate that the two counter-flowing currents do have significant vertical structure in depth zones where temperature and salinity are nearly constant. The current profiles show evidence for the recirculating anticyclonic gyre found by Lanoix (1972) and Capart and Steyaert (1963) in the Western Alboran Basin, and also indicate a possible cyclonic gyre in the Eastern Alboran basin. This report contains all of the PCM data acquired in this field experiment. STD and fixed-level current meter data were also acquired by the Naval Oceanographic Office in the same area during this period. (U)

AD-A025 867 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Predictability of Sea Surface Temperature and Sea Level Pressure Anomalies over the North Pacific Ocean, (U)

NOV 75 20P Davis,Russ E. ;
CONTRACT: N00014-75-C-0152

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Physical Oceanography, v6 n3 p249-266 May 76.

DESCRIPTORS: *Marine climatology, *North Pacific Ocean, Surface temperature, Barometric pressure, Sea level, Anomalies, Seasonal variations, Sea water, Air water interactions, Reprints (U)

Nonseasonal variability of sea level pressure and sea surface temperature in the mid-latitude North Pacific Ocean is examined. The objective is examination of the basic scales of the variability and determination of possible casual connections which might allow prediction of short-term climatic (time scales between a month and a year) variability. (Author) (U)

AD-A025 866 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

On a Long Series of Measurements of Indian Ocean Equatorial Currents Near Addu Atoll, (U)

APR 75 16P Knox,R. A. ;
CONTRACT: N00014-75-C-0152, N00014-69-A-0200-6006

UNCLASSIFIED REPORT
Availability: Pub. in Deep-Sea Research, v23 p211-221 1976.

DESCRIPTORS: *Ocean currents, *Indian Ocean, Surface temperature, Sea water, Air water interactions, Seasonal variations, Monsoons, Spring season, Autumn, Reprints (U)
IDENTIFIERS: Wind stress (U)

Results of nearly 2 years of weekly current and temperature profiles to 300 m in the central equatorial Indian Ocean are discussed. The principal current detected is the eastward jet which appears at both the spring and fall monsoon transitions, driven by strong eastward winds, as noted by WYRTKI. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A025 865 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Eddy Structure in the Central South Pacific Ocean. (U)

AUG 75 6P Patzert,W. C. ;Bernstein, R. L. ;
CONTRACT: N00014-75-C-0152

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Physical Oceanography, v6 n3 p392-394 May 76.

DESCRIPTORS: *Ocean currents, *South Pacific Ocean, Thermoclines, Eddy currents, Reprints (U)

Two west-to-east temperature sections (approx. 2500 km in length) have been constructed from closely spaced (approx. 37 km) XBT measurements in the central South Pacific collected during Legs J and K of the Pacific GEOSECS Expedition. For those of track passing through the islands of the Tuamotu Archipelago, the main thermocline exhibited 50m station-to-station variability on a scale too short to be resolved. In the open ocean away from these islands, the variability was smaller, 10-20m, with only one 200 km scale eddy spatially resolved. (Author) (U)

AD-A025 854 8/12 8/3
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Oceanographic Investigation of the Marginal Sea-Ice Zone of the Chukchi Sea--MIZPAC 74. (U)

DESCRIPTIVE NOTE: Final rept. 10 Jun 74-30 Jun 75, MAY 76 126P Paquette,Robert G. ;Bourke, Robert H. ;
REPT. NO. NPS-58PA76051
PROJ: ZF525-55, NUC-PO-4-0025
TASK: ZF525-55-01

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Presented at the Fall Annual Meeting of the American Geophysical Union, 10 Dec 75, San Francisco, Calif. Master's thesis.

DESCRIPTORS: *Sea ice, *Sea water, *Chukchi Sea, Bering Sea, Summer, Temperature, Salinity, Density, Shallow water, Circulation, Oceanographic data, Hydrographic surveying, Boundaries, Underwater sound, Acoustic velocity, Stratification, Mixing, Melting, Marine geophysics, Arctic Ocean, Water flow, Directional, Theses (U)
IDENTIFIERS: MIZPAC 74 project, Marginal sea ice zones, Ocean circulation, Oceanic structure, Mesostructure (U)

Continuous profiles of temperature and salinity (STD observations) were made in the shallow (approximately 45 m) Bering and Chukchi Seas in July 1974 as part of the MIZPAC program. In addition to measurements in ice-free waters, seven closely spaced crossings of the sea-ice margin were made along with two crossings of the Alaskan coastal zone. In all, 111 STD stations and approximately 100 XBT drops were made for which graphs and tabulations were produced of temperature, salinity, density and sound speed. South of the ice the water is sharply layered with a warm fresh layer (8-10 C and approximately 10m thick) above a cold dense layer. At or near the sea-ice margin the layering gradually disappears with modification of isopycnals and isotherms extending to the bottom. Large scale temperature fluctuations of 0.5 to 2 C, termed mesostructure, were observed at 12-15m depth in the first three crossings, (U)

AD-A025 475 8/10 9/2
UNIVERSITY NATIONAL OCEANOGRAPHIC LAB SYSTEMS WOODS HOLE MASS

Proceedings, Working Conference on Oceanographic Data Systems. (U)

DESCRIPTIVE NOTE: Technical rept., NOV 75 359P Tollios,Constantine D. ; Peal,Kenneth R. ;

UNCLASSIFIED REPORT

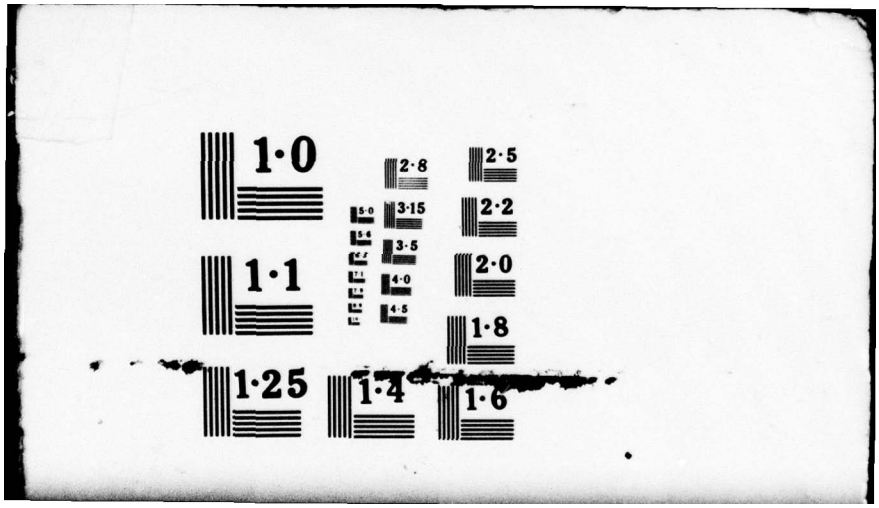
DESCRIPTORS: *Oceanographic data, *Data processing, *Conferences, Data acquisition, Data transmission systems, Satellite communications, Computers, Man machine systems, Standards, Standardization, Computer graphics, Shipboard (U)

The Working Conference on Oceanographic Data Systems is a forum for the presentation of the state of the art. These papers provide a projection of the future of oceanographic data systems and their role in interfacing the research scientist to the ocean. A great deal of experience has been accumulated and the conferees are now in a position to recommend directions which they, as a community, would like to see taken to standardize and consolidate their efforts so that they can provide better service to the oceanographic community. (U)

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AD-A024 968 8/10 8/3 8/7 5/9
8/1
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

Current Research Activities of the Department of Oceanography. (U)

FEB 76 121P
REPT. NO. Ref-A76-6

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Sponsored in part by Office of Naval Research, Arlington, Va., Coast Guard, Washington, D.C., National Oceanic and Atmospheric Administration, Washington, D.C. and Geological Survey, Washington, D.C.

DESCRIPTORS: *Oceanography, *Oceanographic data, *Scientific research, *Education, Universities, Sea ice, Air water interactions, Bathymetry, Ocean waves, Turbulence, Sediment transport, Upwelling, Marine biology, Marine geology, Marine geophysics, Estuaries, Geochemistry, Ocean environments, Underwater acoustics, Washington(State) (U)

;Contents: Dynamics and thermodynamics of the upper ocean; Planetary-scale oceanic processes; Meso-scale oceanic processes; Small-scale physical processes; Coastal dynamics, upwelling, and downwelling; Estuarine processes; Sediment transport; Marine stratigraphy; Coastal and shelf sedimentology; Micropaleontology of sediments; Global tectonics; Genesis of the ocean crust; Analytical chemistry of seawater; Chemical indicators of oceanographic processes; Chemical controls and consequences of biological-biochemical processes; Kinetics and thermodynamics of chemical, biochemical, and geochemical processes; Marine geochemical studies; Chemical studies of marine environments; Biome studies and marine ecosystems analysis; Plankton production; Benthic production; Biology of marine organisms; Biogeography and taxonomy; Marine acoustics; Marine resource development; Applications of oceanography. (U)

AD-A024 800 8/10 20/6
SCRIPPS INSTITUTION OF OCEANOGRAPHY SAN DIEGO CALIF VISIBILITY LAB

The Index of Refraction of Seawater. (U)

DESCRIPTIVE NOTE: Final technical rept., JAN 76 123P Austin,Roswell W. ;Halikas, George ;
REPT. NO. SIO-Ref-76-1
CONTRACT: N66857-73-C-0146, ARPA Order-2431

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Sea water, *Refractive index, Underwater light, Salinity, Temperature, Pressure, Specific gravity, Optical properties, Wavelengths, Density, Light transmission (U)

A smoothly varying and internally self-consistent set of tables of the index of refraction of seawater with respect to air are presented. The dependence of the index on salinity , temperature (0 to 30C), wavelength (400 to 700 nm) and pressure (0 to 1100 kg/sq cm gage) has been fully covered. The relevant literature from prior to 1900 through the present has been extensively reviewed. Various comparisons between indices obtained from these sources and the tables presented have been performed suggesting an overall accuracy of the tabulated index values of about 0.00003 at atmospheric pressure and 0.0001 at higher pressures. The requirements necessary for obtaining salinity and specific gravity directly from measurements of the index of refraction, for oceanographic purposes have been examined. (U)

AD-A024 427 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF UNDERWAY DATA PROCESSING GROUP

Index of Digitized Navigation, Depth and Magnetic Data from Scripps Cruises Processed through December 1975, (U)

APR 76 32P Smith,Stuart M. ;Albright, Uta G. ;Lingley,Ron A. ;Psaropulos,Virginia W. ;

REPT. NO. SIO-Ref-76-4
CONTRACT: N00014-75-C-0152

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Pacific Ocean, Indexes, Oceanographic ships, Marine geophysics, Depth, Magnetic properties, Navigation, Atlantic Ocean, Indian Ocean (U)
IDENTIFIERS: Glomar Challenger vessel (U)

Between 1973, when the last general index report was issued, and December 1975, 41 legs of current Scripps cruises, 17 legs of Glomar Challenger (DSDP), and 32 legs of older SIO cruises have been processed by the Underway Data Processing Group (359,000 miles of navigation, 308,300 miles of magnetics and 248,500 miles of depth data). Included in this report are a cruise leg index; track charts labeled with the cruise identifiers; descriptions of the standard forms of output; and information about obtaining data and the digital data formats. (U)

AD-A024 305 8/10 9/1 7/4 20/1
NAVAL UNDERSEA CENTER SAN DIEGO CALIF

A Digital Filter Technique for Estimating Small-Scale Structure of Salinity, Temperature, and Sound Speed. (U)

DESCRIPTIVE NOTE: Research and development rept. Jul 74-Jun 75,
DEC 75 27P Barakos,P. A. ;Speidel,S. L. ;
REPT. NO. NUC-TP-466
PROJ: SF43-452
TASK: SF43-452-702

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Digital filters, *Salinity, *Thermoclines, *Underwater sound, Noise reduction, Oceanographic ships, Sound transmission, Oceanographic equipment, Data acquisition, Digital recording systems, Magnetic tape, Vertical orientation, Depth finding, Deep oceans, Pacific Ocean, California, Spectral lines, Ship motion, Ocean currents (U)
IDENTIFIERS: Suspension cables, Spectral analysis, STD/SV environmental profiling system, Most Project-2, Most Project-2 (U)

A series of vertical profiles of temperature, salinity, and sound speed was made from a surface vessel using an STD/SV environmental profiling system in water depths of 350 m off Southern California. The data were recorded digitally on magnetic tape at a 0.2-sec sample rate. The spatial resolution of the sensors was degraded by noise introduced into the data by vertical speed variations of the instrumentation package which resulted from wave-induced motions of the ship, variations in suspension cable winch speed, and velocity of underwater currents. The problem discussed is the removal of the noise from the data without removal of the small-scale structure. To accomplish this, each variable, e.g., salinity, temperature, and sound speed, is treated as a time series and the techniques of spectral analysis are employed to establish a cutoff frequency, c. Using this as a criterion, a digital filter was designed to remove the noise from the data. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOMO7

AD-A024 293 8/3
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

Greenland Sea Studies. (U)

DESCRIPTIVE NOTE: Final technical rept. 1 Jun 71-31 May 73,
MAY 74 76P Aagaard,Knut ;
REPT. NO. Ref-M75-98
CONTRACT: N00014-67-A-0103-0023, N0014-67-A-0103-0021
PROJ: NR-307-342

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Also includes Rept. nos. Contrib-711 and Contrib-855.

DESCRIPTORS: *Greenland Sea, *Ocean currents, Velocity, Oceanographic data, Arctic Ocean, Heat balance, Mass, Flowmeters, Mooring (U)
IDENTIFIERS: Spitsbergen (U)

This report is in three parts. Part I is a short paper co-authored with Clark Darnall and Paul Greisman, summarizing the mooring and current measurements in the Greenland-Spitsbergen Passage. Part II is a paper on the Arctic heat and mass budgets, co-authored with Paul Greisman and based on large part on the 1971-72 current measurements. Part III presents the current measurements themselves. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOMO7

AD-A024 287 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF ADVANCED OCEAN ENGINEERING LAB

Marine Physics: Internal Waves and Microstructure. (U)

DESCRIPTIVE NOTE: Technical progress 1 Jul-31 Dec 75,
DEC 75 12P Williams,Gordon D. ;Cairns, James L. ;Lange,R. Edward ;
REPT. NO. SIO-Ref-76-7
CONTRACT: N00014-75-C-1034, ARPA Order-2185
PROJ: NR-260-105

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean waves, *Internal waves, Oceans, Microstructure, Thermal properties, Hydrodynamics (U)
IDENTIFIERS: Midwater thermal structure (U)

This semi-annual report reflects the technical status of internal wave and microstructure studies conducted at this laboratory. (U)

AD-A024 269 8/3 8/10
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Coastal Oceanographic Use of the Defense Meteorological Satellite Program (DMSP). (U)

DESCRIPTIVE NOTE: Final rept.,
SEP 75 43P Huh,Oscar K. ;
REPT. NO. NOO-TR-241
PROJ: NR-387-062

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Ocean currents, *Coastal regions, *Yellow Sea, *Japan Sea, *Okhotsk Sea, Surface temperature, Ocean surface, Infrared detection, Meteorological satellites, High resolution, Infrared images, Fronts(Meteorology), Shallow water, Gulfs, Data acquisition, Data processing, Real time (U)
IDENTIFIERS: Remote sensing, Po Hai Gulf, Korea Strait, Kuroshiro Current, Tsushima Current, DSMP(Defense meteorological satellite program), Defense meteorological satellite program (U)

The spaceborne infrared sensors (8-13 micrometers) of the Defense Meteorological Satellite Program (DMSP) have provided remarkable images of mesoscale sea surface thermal patterns outlining currents, thermally distinct watermasses, and oceanic fronts. During 1971-72 the thermal outlines of the South Korean Coastal Oceanic Front, the Tsushima Current, the Yellow Sea Warm Current, the China Coastal Current and the Liman Current were detected and monitored with the 2-nmi resolution infrared DMSP imagery. The data are displayed in a series of 16 gray shades on photographlike images covering an area of 1560x3000 nmi of the Earth's surface. The images are oblique Mercator projections at scales of 1:15,000,000 or enlarged to 1:7,500,000 with a thermal resolution of 1.6C. The outstanding characteristics of this system are: (1) The high repetition rate of coverage (minimum) of four times daily), (2) near real-time data availability, (3) high-resolution (1/3 and 2 nmi) visual and infrared images, and (4) global coverage. As in other infrared systems, (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOMO7

AD-A024 179 8/10 8/7
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Physiography of the Gulf of Mexico and Caribbean Sea. (U)

DESCRIPTIVE NOTE: Technical rept.,
75 68P Uchupi,Elazar ;
REPT. NO. WHOI-Contr.b-3031, WHOI-76-42
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT
Availability: Pub. in The Ocean Basins and Margins, v3 chl p1-64 1975.

DESCRIPTORS: *Ocean bottom topography, *Mexico Gulf, *Caribbean Sea, *Marine geology, Seismic data, Bathymetry, Structural geology, Stratigraphy, Archipelagoes, Tectonics, Geologic age determination, Ocean ridges, Deltas, Orogeny, Ocean models, Continental drift, Evolution(General), Reprints (U)
IDENTIFIERS: Ocean basins, Continental margins (U)

The Gulf of Mexico and the Caribbean Sea have attracted the attention of many geological investigators because of their topographic complexity. The author reviews several recent theories concerning the topography and structure of these regions. He then attempts to describe the physiography of both areas in the light of seismic reflection data collected by numerous investigators during the past decade, data from the Deep-Sea Drilling Project, and a new detailed bathymetric chart of the Gulf of Mexico and Caribbean. These new data greatly expand the fund of critical knowledge and have resulted in new insights into the origin and evolution of the Gulf of Mexico and Caribbean. (U)

AD-A024 002 8/3
HYDRONAUTICS INC LAUREL MD

A Laboratory Study of Wind-Wave-Current Interactions. Part I. (U)

DESCRIPTIVE NOTE: Technical rept.,
JAN 75 78P Scotti,Richard S. ;
REPT. NO. TR-7211-8
CONTRACT: N00014-72-C-0509, ARPA Order-1910
PROJ: NR-062-472

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean waves, *Ocean currents, Surface waves, Wind direction, Drift, Beaches, Wind velocity, Subsurface, Strain rate, Relaxation time, Interactions (U)
IDENTIFIERS: Wind wave current interactions (U)

Two series of experiments were performed to study the interactions between both the wind-induced drift layer and the surface wave spectrum and a spatially varying subsurface current field. In the first, measurements were made of the response of the drift layer and surface wave spectrum to an appreciable, but unknown, current gradient. This was accomplished by forcing the current from a 90 cm-deep diffuser section onto a 68.7 cm-deep flat beach. The flow, thereby, experienced a current gradient which diminished to, and remained essentially at, zero a short distance downstream of the beach leading edge. Relaxation times inferred from the data are on the order of 1 to 3 minutes. For the second test series, the beach was set at an angle of 2.65 deg to produce strain rates. Here again, the results indicate that the response of the drift layer lags behind that of the current, as strained by the beach. The measurements of surface wave spectra taken for each of the conditions tested are presently being analyzed in detail; however, some preliminary results are presented. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A023 929 4/2 8/10
NATIONAL CLIMATIC CENTER ASHEVILLE N C

A Climatic Resume of the Mediterranean Sea. (U)

NOV 75 317P
MONITOR: NAVAIR 50-1C64

UNCLASSIFIED REPORT

DESCRIPTORS: *Marine climatology, *Mediterranean Sea, Maps, Graphs, Statistical data, Ocean environments, Meteorological data, Visibility, Ceiling, Wind, Atmospheric temperature, Sea water, Temperature, Ocean surface, Ocean waves, Height, Ocean currents, Tables(Data), Seasonal variations (U)

This report presents marine climatological data for the Mediterranean Sea. A total of 7 elements are presented. These include visibility, ceiling, wind, air temperature, sea surface temperatures, waves and surface currents. (Author) (U)

AD-A023 705 8/14 8/10
MASSACHUSETTS INST OF TECH CAMBRIDGE DEPT OF EARTH AND PLANETARY SCIENCES

Magnetic Lineations in the Southern Part of the Central Indian Basin, (U)

AUG 74 9P Sclater,John G. ;Luyendyk, Bruce P. ;Meinke,Linda ;
CONTRACT: N00014-67-A-0204-0048
PROJ: NR-083-157

UNCLASSIFIED REPORT
Availability: Pub. in Geological Society of America Bulletin, v87 p371-378 Mar 76.

DESCRIPTORS: *Seafloor spreading, *Indian Ocean, Magnetic anomalies, Residual, Orogeny, Fracture(Mechanics), Ocean ridges, Continental drift, India, Geologic age determination, Tectonics, Reprints (U)
IDENTIFIERS: Ocean basins, Plate tectonics (U)

A lineated sequence of distinctive residual magnetic anomalies has been observed in the southern part of the Central Indian Basin. These anomalies, which strike N45 deg W (identified as anomalies 7-15) were formed by a ridge spreading at a half-rate of 2.5 cm/yr. They terminate abruptly against a N45 deg E-trending fracture zone. At 27 deg S, 84 deg E, the fracture zone appears to change direction abruptly to N10 deg E. The mean depth drops 250 m across the fracture zone and the lineations are offset right laterally to the south. This change in lineation pattern can be explained only by a reorientation of the direction of the Southeast Indian Ridge from east-west to northwest-southeast between the times of anomalies 18 and 15 (approximately 43 to 39 m.y. B.P.) -- the same time that India collided with Eurasia. The time correlation may be evidence of a relationship between the formation of the Himalayas and an abrupt change in the direction of relative motion of the Indian and Antarctic plates at the Eocene-Oligocene boundary. The magnetic data also indicate that the Southeast Indian Ridge between the Ninetyeast Ridge and 85 deg E jumped 11 degrees to the south between 63 and 53 m.y. B.P., approximately when Australia started to separate from Antarctica. (U)

AD-A023 640 8/3 20/1 19/4 17/4
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

A Quasi-Lagrangian Study of Mid-Ocean Variability using Long Range Sofar Floats. (U)

DESCRIPTIVE NOTE: Technical rept.,
MAR 75 33P Voorhis,A. D. ;Webb,D. ; Rossby,T. ;
REPT. NO. WHOI-76-36, WHOI-Contrib-3055
CONTRACT: N00014-66-C-0241, NSF-GX-30220
PROJ: NR-083-004
MONITOR: NSF/IODE 76-302

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Marine Research, v33 n3 p355-382 1975.
SUPPLEMENTARY NOTE: Prepared in cooperation with Yale University under contract N00014-67-A-0097-0001.

DESCRIPTORS: *Oceanography, *Ocean currents, *Floating bodies, *Trajectories, Eddy currents, Ocean bottom, Sound ranging, Underwater sound signals, Depth, Range(Distance), Mapping, Pattern recognition, Reprints (U)
IDENTIFIERS: MODE(Mid-Ocean Dynamics Experiment), Float trajectories, Sofar, SOFAR(Sound Fixing And Ranging) (U)

Twenty neutrally buoyant SOFAR floats were used in the Mid-Ocean Dynamics Experiment (MODE) to study the structure and variability of the deep ocean currents. The floats were clustered so that the pattern of motions could be resolved (mapping and pattern recognition). A number of float trajectories are shown and the very individual character of their signature is emphasized. Some floats remain nearly stationary for a year whereas others will cover hundreds of kilometers to the south or west in just a few months. Superposition of all trajectories in the spaghetti diagram is shown to reveal considerable organization of the 'eddy' field in the MODE area and is thought to be caused by the near presence of the Blake-Bahama Outer Ridge to the west. There is considerable asymmetry to the float dispersal with floats rapidly scattering to the south and west, but not to the north and east even though the r.m.s. velocities are a factor 3 to 6 times greater than the mean drift.

(U)

AD-A022 721 8/3 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Bottom Water Flow Through the Kane Gap, Sierra Leone Rise, Atlantic Ocean. (U)

DESCRIPTIVE NOTE: Technical rept., NOV 74 10P Bunce,Elizabeth T. ;Hobart, Michael A. ;Sclater,John G. ;
REPT. NO. WHOI-76-17, WHOI-Contrib-3440
CONTRACT: N00014-66-C-0241, NSF-GA-40163
PROJ: NR-083-004

UNCLASSIFIED REPORT

Availability: Pub. in Jnl. of Geophysical Research, v80 n36 p5083-5088, 20 Dec 75.

DESCRIPTORS: *Ocean currents, *Ocean bottom topography, Atlantic Ocean, Equatorial regions, Ocean bottom, Sea water, Water flow, Deep water, Low temperature, Erosion, Sediments, Circulation, Basins(Geographic), Sources, Antarctic regions, Reprints (U)
IDENTIFIERS: Bottom water, Cold water, Ocean circulation, Ocean basins (U)

Continuous seismic profiling, detailed temperature versus depth measurements, heat flow measurements, and a bottom photograph in the Kane Gap on the Sierra Leone Rise in the Atlantic Ocean suggest that a bottom current of cold water flows along the floor of the gap. The layer of cold water is 320 m thick and is marked by a large temperature gradient at the top. The layer is nearly isothermal at 2.28 C, which is 0.12 C colder than the water 500 m off the bottom. A channel exists in flat-lying sediments, which in turn overlay thicker, dipping sediments which exhibit internal evidence for erosion or selective nondeposition. This suggests a three-step depositional history: (1) erosion of a sequence of thick, dipping sediments, (2) deposition of flat-lying sediments, and (3) erosion of small channels in flat-lying sediments. It is not possible to determine conclusively the velocity or direction of flow of the bottom current from our data. The bottom photograph suggests flow to the north. This current probably reflects the effects on eastern basin circulation of the crossing of Antarctic bottom water through the Mid-Atlantic Ridge at either the Romanche fracture zone or the Vema fracture zone. (Author) (U)

AD-A022 694 8/3 20/4 12/1
DELAWARE UNIV NEWARK DEPT OF CIVIL ENGINEERING

Numerical Models for the Prediction of Wave Set-up and Nearshore Circulation. (U)

DESCRIPTIVE NOTE: Technical rept., JAN 76 128P Birkemeier,William A. ; Dalrymple,Robert A. ;
REPT. NO. Ocean Engineering-3, TR-1
CONTRACT: N00014-76-C-0342

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean waves, *Hydrodynamics, *Ocean models, Offshore, Finite difference theory, Water flow, Ocean models, Ocean waves, Refraction, Interactions, Anisotropy, Ocean bottom, Friction, Wind, Coastal regions, Flooding, Beaches, Surf, Numerical methods and procedures, Mathematical prediction (U)
IDENTIFIERS: Rip currents (U)

A finite difference model for predicting time-dependent, wave-induced nearshore circulation is discussed. The formulation includes wave refraction, wave-current interaction, an anistropic bottom friction, wave set-up, wind effects and coastal flooding. Results are shown for three cases including: set-up in a wave channel due to steady waves and wave groups, circulation in a rectangular wave tank under oblique wave attack, and for wave and wind induced circulation on a longshore periodic beach. Important results are that tuned wave groups can incite seiching in an enclosed basin and harbors and that rip currents will be induced or maintained by the presence of surf zone channels. (Author) (U)

AD-A022 552 8/3 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

A Compilation of Moored Current Data and Associated Oceanographic Observations. Volume IX. (1973 Internal Wave Experiment (IWEX)). (U)

DESCRIPTIVE NOTE: Technical rept., MAR 76 153P Tarbell,S. ;Briscoe,M. G. ;Chausse,D. ;
REPT. NO. WHOI-75-68
CONTRACT: N00014-76-C-0197
PROJ: NR-083-400

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with Johns Hopkins Univ., Laurel, Md. Applied Physics Lab.

DESCRIPTORS: *Ocean currents, *Oceanographic data, *Mooring buoys, *North Atlantic Ocean, Surface temperature, Internal waves, Pressure, Wind, Power spectra, Diagrams, Ocean waves, Deep water, Measurement (U)
IDENTIFIERS: Internal wave experiment, Ocean temperature (U)

Summaries of basic current, temperature and pressure measurements made with instruments suspended from a subsurface tri-mooring by the Woods Hole Oceanographic Institution during the Internal Wave Experiment (IWEX) are presented. Also presented are data collected by a wind recorder and two near-surface current and temperature records from a nearby spar buoy. Average currents are presented in computer generated output as basic statistics, histogram plots, spectra, progressive vector diagrams, east vs. north component plots, and variable vs. time plots. Averaged temperature and differential temperature from the current meters are presented as basic statistics, histogram plots, spectra, and variable vs. time plots. Pressure and temperature measurements from T/P recorders are displayed versus time. (U)

AD-A022 541 8/10 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Sediment Waves (Giant Ripples) Transverse to the West Coast of Mexico, (U)

JUL 75 8P Shepard,F. P. ;Marshall,N. F. ;McLoughlin,P. A. ;Fisher,R. L. ;
CONTRACT: N00014-75-C-0152, N00014-69-A-0200-6049

UNCLASSIFIED REPORT

Availability: Pub. in Marine Geology, 20 p1-6 1976.

DESCRIPTORS: *Ocean bottom topography, *Ripples, *Ocean currents, Dunes, Directional, Sediments, Sediment transport, Seasonal variations, Continental slopes, Pacific Ocean, Mexico, Coastal regions, Reprints (U)
IDENTIFIERS: Sediment waves (U)

A 45-km belt of large symmetrical sediment waves extends along the west coast of Mexico west of Manzanillo between depths of 320 and 770 m. They are thought to be the result of a strong subsurface current that changes seasonally from southeast to northwest. (Author) (U)

AD-A022 503 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

South Atlantic Diapiric Structures. (U)

DESCRIPTIVE NOTE: Journal article,
JAN 75 19P Leyden,R. ;Asmus,H. ;
Zembruscki,S. ;Bryan,G. ;
REPT. NO. LDGO-2289
CONTRACT: N00014-67-A-0108-0004, NSF-GX-34410
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in the American Association of Petroleum Geologists Bulletin, v60 n2 p196-212 Feb 76.

DESCRIPTORS: *Structural geology, *Marine geology, *Ocean bottom topography, *South Atlantic Ocean, Continental shelves, Brazil, Mapping, Sediments, Salts, Ocean ridges, Geologic age determination, Continental drift, Africa, Seismic data, Reprints (U)
IDENTIFIERS: Continental margins, Evaporites, Diapiric structures, Salt domes, Domes(Geology), Ocean basins, Walvis Ridge (U)

A zone of offshore diapiric structures is present with a region of known continental-shelf salt and associated evaporites on the margin of eastern Brazil. The zone extends for approximately 18 deg of latitude. At its southern end, off Santos, the diapir zone is approximately 350 mi wide where it forms the Sao Paulo plateau. At the northern extreme, the zone has been mapped solely on the basis of the presence of known continental-shelf salt; seismic-reflection and refraction data have been used to map the offshore limits. Although it is debatable whether salt produced all the diapirs, the offshore limit is referred to as the 'salt edge.' The Brazilian zone is compared with, and matched against, a West African diapir zone which extends for approximately 12 deg of latitude from Gabon to Angola, and probably is also related to the salt in the coastal basins. If the two zones are matched, they form a model of the early South Atlantic. The model indicates that the West African Walvis Ridge was part of a barrier to open-sea conditions as the Alantic opened from the south. (U)

AD-A022 472 8/3 14/2
INFORMATICS INC ROCKVILLE MD

Soviet Material on Internal Wave Effects, Number 5, March 1976, (U)

MAR 76 100P Hibben,Stuart G. ;Kourilo , John ;Shresta,B. L. ;Hess,M. ;
CONTRACT: MDA903-76-C-0099, DARPA Order-3097

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Number 4 dated Sep 75, AD-A015 653.

DESCRIPTORS: *Internal waves, *Ocean waves, *Capillary waves, *Bibliographies, USSR, Abstracts, Turbulent flow, Ocean surface, Surface properties, Oceanographic equipment, Ocean environments, Microstructure, Internal, Sources, Detection, Detectors, Flowmeters, Instrumentation, Active systems, Passive systems, Ocean models, Indexes, Translations (U)
IDENTIFIERS: Oceanic structure, Most Project-2 (U)

This collection of abstracts on generation and detection of internal waves is based on items listed in the fifth Bibliography of Soviet Material on Internal Waves, published 10 Nov 1975, which covers material received June-Oct 1975. The abstracts are divided into internal effects and surface effects, comprising active and passive measurement of wave states. An author index is appended. (U)

AD-A022 032 9/2
NAVAL RESEARCH LAB WASHINGTON D C

A Program to Plot a Track and Bathymetry or Magnetic Profile on a Polar Stereographic Projection. (U)

DESCRIPTIVE NOTE: Final rept.,
FEB 76 36P Blodgett,Marilyn L. ;
Massingill,James V. ;
REPT. NO. NRL-7929
CONTRACT: ARPA Order-1787
PROJ: NRL-S01-47, ZF52-552
TASK: ZF52-552-001

UNCLASSIFIED REPORT

DESCRIPTORS: *Computer programs, *Map projection, *Oceanographic data, Stereomapping, Flow charting, FORTRAN, Digital computers, Algorithms, Profiles, Bathymetry, Tracking, Navigational aids (U)
IDENTIFIERS: *Polar stereographic projection (U)

A program has been written for plotting a track and the superimposed bathymetry or magnetic profile on a polar stereographic projection. This profile series is plotted perpendicular to the track, using uncorrected fathoms or meters for bathymetry and residual magnetic intensity for magnetics. The program was written in Fortran IV for use on a CDC 3800 Computer; however, the program can be converted to run on other systems with little difficulty. (Author) (U)

AD-A022 031 9/2 8/10 8/2
NAVAL RESEARCH LAB WASHINGTON D C

A Program to Plot an Annotated Track or a Track and Bathymetry or Magnetic Profile on a Mercator Projection. (U)

DESCRIPTIVE NOTE: Final rept.,
FEB 76 41P Blodgett,Marilyn L. ;
Massinglill,James V. ;
REPT. NO. NRL-7930
CONTRACT: ARPA Order-1787
PROJ: NRL-S01-47, ZF52-552
TASK: ZF52-552-001

UNCLASSIFIED REPORT

DESCRIPTORS: *Computer programs, *Map projection, *Oceanographic data, Flow charting, FORTRAN, Digital computers, Algorithms, Profiles, Bathymetry, Tracking, Navigational aids, Acoustic surveillance (U)
IDENTIFIERS: *Mercator projection, FORTRAN 4 programming languages (U)

A program has been written for plotting an annotated track or for plotting a track and the superimposed bathymetry or magnetic profile on a Mercator projection. The program reads the data (navigation, bathymetry, or magnetics) from a magnetic tape in BCD form. The program will annotate every point or every nth point. Navigation is annotated with fix numbers, bathymetry will uncorrected fathoms, meters, or corrected meters, and magnetics with the residual magnetic intensity. The profile series is plotted perpendicular to the track, using uncorrected fathoms or meters for bathymetry and residual magnetic intensity for magnetics. The program was written in Fortran IV for use on a CDC 3800 computer; however, the program can be converted to run on other systems with little difficulty. (Author) (U)

AD-A021 972 8/10 9/2
NAVAL RESEARCH LAB WASHINGTON D C

NRL's Oceanographic Computer System: Present Capability and Future Enhancements. (U)

DESCRIPTIVE NOTE: Interim rept., FEB 76 20P Steiger,Daniel ;Clamons,J. Dean ;
REPT. NO. NRL-MR-3216
PROJ: NRL-Z00-01Z

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Computer applications, Executive control programs, Computer programming, Digital computers, Real time, Disk recording systems, Shipboard, Airborne, Data processing, Random access computer storage, Navigational aids, Marine meteorology, Aircraft noise, Radiated noise (U)

NRL in the past 2 years has developed three oceanographic computers ssystems. The computer systems are based around Hewlett-Packard 2100 Series computers. The software used in a Real-Time Executive with multiprogramming and multiuser capabilities. NRL's philosophy has been to acquire and process the data in the field automatically, in real time, using the oceanographic computer systems. To accomplish this goal, much attention has been placed upon the interfacing of special-purpose as well as general-purpose devices to the computer system. Many special-purpose devices have already been interfaced to the computer system, such as navigation equipment, ship sensors, aircraft sensors, atmospheric sensors, and magnetometers. General-purpose devices such as random access disks and digital magnetic tapes have been provided in order to access and save the data. Also, several graphical plotting devices are available, including a large flatbed plotter along with displays and line printers to obtain and view the results. A special Fourier analyzer that works in conjunction with a dedicated HP2100 computer is used when real-time and off-line spectrum analysis is required. The oceanographic computer systems have been operated aboard ship and in aircraft alike. (U)

AD-A021 933 4/2 8/10
NAVAL AIR SYSTEMS COMMAND WASHINGTON D C

U. S. Navy Marine Climatic Atlas of the World. Volume I. North Atlantic Ocean (Revised 1974), (U)

DEC 74 385P Meserve,J. M. ;
REPT. NO. NAVAIR-50-1C-528

UNCLASSIFIED REPORT
Availability: Paper copy available from GPO, Washington, D.C. 20402.
SUPPLEMENTARY NOTE: Supersedes report dated 1 Nov 55, AD-92371.

DESCRIPTORS: *Marine meteorology, *North Atlantic Ocean, Wind, Atmospheric temperature, Surface temperature, Wind direction, Wind velocity, Humidity, Atmospheric precipitation, Visibility, Cloud cover, Ceiling, Barometric pressure, Ocean waves, Tropical cyclones, Ocean environments, Meteorological charts, Tables(Data), Ocean tides, Sea ice (U)

The eight volume series of the U. S. Navy Marine Climatic Atlas of the World has had wide acceptance as an authoritative reference for large scale operational planning and applied research. This volume, based on nearly 20 years of additional data, is an update of Volume I (U.S. Navy Marine Climatic Atlas of the World, 1955) and is designed to fulfill the same requirements. Topics discussed include the following: Wind, air temperature, sea surface temperature, humidity, precipitation, visibility, ceiling, barometric pressure, sea ice, and ocean waves. (U)

AD-A021 548 8/3 8/12
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

Toward New Mass and Heat Budgets for the Arctic Ocean. (U)

DESCRIPTIVE NOTE: Technical rept., JAN 75 9P Aagaard,Knut ;Greisman,Paul ;
REPT. NO. TR-4
CONTRACT: N00014-67-A-0103-0021, N00014-67-A-0103-0023
PROJ: NR-307-326, NR-307-342

UNCLASSIFIED REPORT

Availability: Pub. in Jnl. of Geophysical Research, v80 n27 p3821-3827, 20 Sep 75.

DESCRIPTORS: *Arctic Ocean, *Heat loss, *Sea ice, *Mass, Ocean currents, Salinity, Models, Water, Shear properties, Greenland, Reprints (U)
IDENTIFIERS: Heat budgets, Mass budgets (U)

Recent current measurements are incorporated into new heat and mass budgets for the Arctic Ocean. These budgets demonstrate the overwhelming importance of advection by the West Spitsbergen current, which in 1971-1972 transported 16.3 x 10 to the 9th power kcal/sq cms into the Arctic Ocean. Partially on the basis of the heat budget, it is suggested that there is a large heat loss to the atmosphere in the sothwestern Eurasian basin, in excess of 20 kcal/sq cm yr. Annual mean transport in the West Spitsbergen Current could easily vary by 35% and might constitute a significant perturbation on the Arctic heat budget. The mass budgets point toward the general ineffectiveness of the Arctic Ocean in transforming subsurface water masses, and they also indicate a large shear between the ice and the upper layer of the East Greenland Current. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A021 382 8/3 20/4
PURDUE UNIV LAFAYETTE IND GREAT LAKES COASTAL RESEARCH LAB

Wave Analysis for the Breaker Zone. Unsteadiness in Longshore Currents. (U)

DESCRIPTIVE NOTE: Technical rept., DEC 75 26P Wood,William L. ;Meadows, Guy A. ;
REPT. NO. TR-1, TR-3
CONTRACT: N00014-75-C-0716
PROJ: NR-388-089

UNCLASSIFIED REPORT

Availability: Pub. in Proceedings of the International Symposium on Ocean Wave Measurement and Analysis, 1 p774-789 Sep 74 and Pub. in Geophysical Research Letters, v2 n11 p503-505 Nov 75.

DESCRIPTORS: *Ocean waves, *Hydrodynamics, Parametric analysis, Computations, Stability, Energy levels, Computer programs, Data processing, Shallow depth, Reprints (U)
IDENTIFIERS: Breakers(Marine), Longshore currents (U)

The measurement and analysis of breaking wave parameters and their transformation within the breaker zone must be approached in a considerably different manner from that used on open ocean waves. Free surface time histories taken within the breaker zone should be interpreted with caution due to ambiguities arising from the rapid variations in wave parameters which subsequently create errors in transforming the temporal records to a spatial reference frame. A large number of wave sensors should be used to adequately measure the nonlinear transforming wave system. Based on these considerations a variety of wave analysis techniques are discussed with respect to their applicability in the breaker zone. A multiparametric wave analysis system is described which was developed to evaluate wave transformations, wave stability, and wave energy distribution in the breaker zone. This computer analysis system receives input data from an extensive network of shallow water monitoring stations and calculates a series of wave parameters, indices, and energy estimates. (U)

AD-A021 380 8/7 8/10
WISCONSIN UNIV MADISON DEPT OF GEOLOGY AND GEOPHYSICS

Geological History of the Arctic Ocean Basin. (U)

DESCRIPTIVE NOTE: Technical rept., NOV 74 26P Clark,David L. ;
REPT. NO. TR-21
CONTRACT: N00014-67-A-0128-0002
PROJ: NR-307-311

UNCLASSIFIED REPORT
Availability: Pub. in Canada's Continental Margins and Offshore Petroleum Exploration, Canadian Soc. Petrol. Geol. Memoir 4, P501-524.
SUPPLEMENTARY NOTE: Report on Arctic Ocean Sediment Studies Program.

DESCRIPTORS: *Arctic Ocean, *Marine geology, *Continental drift, Ocean bottom topography, Ocean ridges, History, Geologic age determination, Seafloor spreading, Seismic data, Sediments, Paleontology, Foraminifera, Structural geology, Basins(Geographic), Reprints (U)
IDENTIFIERS: Ocean basins, Geologic basins, Glaciation, Glacial deposits, *Arctic Ocean basin (U)

The central Arctic Ocean Basin is an irregular triangular shaped basin that averages about 3500 meters in depth. The principal abyssal plains are interrupted by four prominent highs, the Nansen and Lomonosov Ridges, and the Alpha Cordillera and Chukchi Plateau. Present seismic activity along the Nansen Ridge and its geographic continuity with the mid-Atlantic Ridge suggests that the former is the modern Arctic Ocean spreading axis. The Lomonosov Ridge probably represents a portion of the Barents Shelf that has been separated by movement away from the Nansen Ridge. Geology of the area surrounding the Arctic Basin has been used as evidence that the ocean existed during most of the Phanerozoic. An alternative idea is that the basin may be younger, and originated during the Mesozoic by drifting of the present Kolyma block from the central Arctic into the Siberian platform. There are different theories concerning the origin of the Arctic Basin. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A021 376 8/3
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Vertical Structure of Currents and Deep Temperatures in the Western Sargasso Sea. (U)

DESCRIPTIVE NOTE: Journal artical, MAY 75 14P Pochapsky,T. E. ;
REPT. NO. LDGO-2284
CONTRACT: N00014-67-A-0108-0011, NSF-GX-30987
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Physical Oceanography, v6 n1 p45-56, 1 Jan 76.

DESCRIPTORS: *Sargasso Sea, *Ocean currents, Velocity, Temperature, Sea water, Depth, Vertical orientation, Internal waves, Ocean waves, Temperature gradients, Flow rate, Transport properties, Thermoclines, Deep oceans, Periodic variations, Oceanographic data, Reprints (U)
IDENTIFIERS: Oceanic structure(Oceanography), Richardson number, Baroclinic flow, Ocean circulation (U)

Currents and temperatures were measured as a function of depth at two locations during the Mid-Ocean Dynamics Experiments of 1972-73. Instrumented profiling floats were used and flows were determined by acoustic ranging. In some instances floats were trimmed to hover at definite depths in order to increase the resolution and measure local details. The barotropic flows were large, 4.6 cm/s at the 28 deg N, 69 deg W location and 7.8 cm/s at the 28 deg N, 68 deg 40 min W location. The energy density of the first baroclinic mode was larger than that of the barotropic flow at both locations. The shapes of the horizontal trajectories of the profiling floats changed only slowly from day to day. Superimposed on these profiles were velocity variations of the high vertical wavenumber modes associated with inertial and internal waves. They were within a band of + or - 1.5 cm/s below the thermocline and + or - 3.5 cm/s in the thermocline. Current profiles as well as hodographs of the velocity on descent show a chaotic modal structure for those higher frequencies. (U)

AD-A021 217 13/10
CENTER FOR NAVAL ANALYSES ARLINGTON VA INST OF NAVAL STUDIES

The Capital Structure for Ocean Science: Final Report of the Ocean Science and Technology Resource Study (ORS), (U)

MAR 75 83P Hale,Robert F. ;Jondrow, Anne S. ;Koehr,James E. ;Bender,Susan E. ; Kuzmack,Richard A. ;
REPT. NO. CNS-1048
CONTRACT: N00014-68-A-0091-0014

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanography, *Oceanographic equipment, *Management planning and control, Utilization, Oceanographic ships, Deep submergence vehicles, Aircraft, Costs, Investments, Resource management (U)

The Ocean Science and Technology Resources Study (ORS) determines whether there is underinvestment in the capital assets needed for future United States efforts in ocean science and estimates costs to meet any underinvestment. ORS also determines whether existing capital assets are underutilized. Assets considered in ORS include ships, aircraft, submersibles/habitats, and major computers; ORS concentrates on ships since they are by far the most numerous type of assets. (U)

AD-A020 760 8/3 12/1
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Gaussianity of the Current and Temperature Data from the Trimoored Internal Wave Experiment (IWEX). (U)

DESCRIPTIVE NOTE: Technical rept., DEC 75 68P Iida,Lucio ;Briscoe, Melbourne G. ;
REPT. NO. WHOI-75-67
CONTRACT: N00014-76-C-0197
PROJ: NR-083-400

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with Johns Hopkins Univ., Laurel, Md. Applied Physics Lab.

DESCRIPTORS: *Internal waves, *Ocean currents, *Statistical tests, Ocean waves, Statistical analysis, Sea water, Temperature, Bathythermograph data, Normal distribution, Spatial distribution, Power spectra, Time series analysis, Correlation techniques, Mathematical models, Confidence level, Correlation techniques, Velocity, Directional, Displacement, North(Direction), Vertical orientation (U)
IDENTIFIERS: IWEX(Internal wave experiment), Kolmogorov-Smirnov test, Goodness of fit tests, Chi square test, East(Direction) (U)

This report describes the time variability of the Gaussianity of the East and North velocity components, and the Up (vertical displacement) variable of the Internal Wave Experiment (IWEX). In order to use the classical Chi-square and Two-Tailed Kolmogorov-Smirnov goodness-of-fit tests on a Gaussian distribution, one must consider the correlation structure of the data, i.e., the non-white spectral characteristics of the three variables. Starting with artificially generated random time series that are white in frequency space, the Gentleman and Sande (1966) method is used to incorporate desired spectral shapes into the series. Three frequency filters modeling the internal wave power spectrum very roughly and to different degrees of accuracy are used in the simulations. (U)

AD-A020 568 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Tow Spectra from MODE. (U)

DESCRIPTIVE NOTE: Technical rept.,
OCT 74 10P Katz,Eli Joel ;
REPT. NO. WHOI-75-66, WHOI-Contrib-3455
CONTRACT: N00014-70-C-0205, NSF-GX-34906
PROJ: NR-263-103
MONITOR: NSF/IDOE 75-309

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v80 n9 p1163-1167, 20 Mar 75.

DESCRIPTORS: *Internal waves, *Thermoclines, *Sargasso Sea, Towed bodies, Bathythermograph data, Oceanographic equipment, Oceanographic data, Ocean models, Comparison, Power spectra, Vertical orientation, Marine geophysics, Field conditions, Reprints (U)
IDENTIFIERS: Mode project (U)

Towed sensor data from the main thermocline in the Sargasso Sea south of Bermuda during the Mid-Ocean Dynamics Experiment are reported and compared with the Garrett and Munk internal wave model. The tows consisted of two sensors suites vertically spaced 11 or 21 m apart; the depth of tow was varied so as to continuously bracket an isothermal surface. Spectral analysis in the wave number band from 0.015 to 5 cycles km. results in a vertical displacement spectrum of the isopycnal surface that is statistically indistinguishable from earlier estimates in the same area. In this wave number band, agreement with both the 1972 and the 1975 versions of the Garrett and Munk internal wave model is good, though the model predicts a spectra level about one third too high. The vertical coherence spectra obtained from the temperature fluctuations at the two separations describe the horizontal wave number bands over which vertical coherency is lost. The 1975 model underestimates coherency but can be brought into better agreement by reducing the 'mode number scale'. (U)

AD-A020 308 8/10 8/3
COAST GUARD WASHINGTON D C

Oceanographic Observations: Nova Scotia to Cape Hatteras, North Carolina (October-November 1969 and May-June 1970), (U)

JAN 75 248P Hayes,Richard M. ;
REPT. NO. USCG-373-66

UNCLASSIFIED REPORT

DESCRIPTORS: *Bathythermograph data, *Gulf Stream, *Sea water, North Atlantic Ocean, Water flow, Maine Gulf, Continental slopes, Continental shelves, Seasonal variations, Statistical analysis, Autumn, Spring season, Wind, Circulation, Salinity, Temperature, Density, Surface temperature, Mixing (U)
IDENTIFIERS: Ocean circulation, Meanders, Water mass analysis, Geostrophic wind, Midatlantic bight, DOT/5M (U)

A volumetric statistical (T-S) analysis of water masses is presented for two Coast Guard oceanographic cruises in support of the International Commission for the Northwest Atlantic Fisheries, from 25 Oct-22 Nov 1969 and 19 May-9 June 1970. The fall cruise data exhibited a 54% greater volume of Gulf Stream water in the survey area than the spring cruise, a result of a Gulf Stream meander which brought large volumes of tropical water into the slope region. Effectively the Gulf Stream meanders resulted in an exchange of water masses bringing oceanic water into the coastal zone and vice versa. Seasonal changes in the geostrophic conditions shoreward of the Gulf Stream may influence the extent of intrusion of that water mass into the continental shelf region. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A020 290 8/3 8/1 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Cruise Report - KNORR 44. (U)

DESCRIPTIVE NOTE: Technical rept.,
NOV 75 32P Tupper,George H. ;
REPT. NO. WHOI-75-59
CONTRACT: N00014-74-C-0262
PROJ: NR-083-004

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanography, Oceanographic ships, Recovery, Mooring buoys, Oceanographic equipment, Gulf Stream, Ocean currents, Marine biology, Sampling (U)
IDENTIFIERS: KNORR 44 cruise (U)

Knorr-44 was a single leg cruise, Woods Hole to Woods Hole. Duration of the cruise was fifteen days, December 4-19, 1974. Fifteen deep-sea subsurface moorings were recovered, one of which was at sea for one year. The remaining moorings had been out for eight months. An east-west gulf stream survey was carried out using XBT's and CTD's. One VACM test mooring was launched and a twenty-four hour CTD yo-yo experiment was done. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A020 128 8/3 17/9
STANFORD RESEARCH INST MENLO PARK CALIF

Measurement of Sea Scatter and Buoy Tracks at Long Ranges by High-Resolution OTH-B Radar. (U)

DESCRIPTIVE NOTE: Final rept. 1 Dec 73-31 Dec 75,
DEC 75 67P Maresca,Joseph W. , Jr.;
Barnum,James R. ;
CONTRACT: N00014-74-C-0138
PROJ: SRI-3071, NR-083 320

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean waves, *Ocean currents, *Sea clutter, *Radar reflections, Over the horizon detection, Wind velocity, Regression analysis, North Pacific Ocean (U)
IDENTIFIERS: Remote sensing (U)

This is the final report on a two-year contract entitled 'Measurement of Sea Scatter and Buoy Tracks at Long Ranges by High-Resolution OTH-B Radar.' The Wide Aperture Research Facility (WARF), a high-resolution skywave high-frequency (HF) radar located in central California, was used to obtain remote measurements of the ocean wave spectrum, overwater wind velocity, and ocean currents in the North Pacific Ocean. The ocean currents were determined by tracking drogued and undrogued drifting buoys carrying a low-power HF repeater. Three types of sea backscatter Doppler spectra were recorded to determine the ocean wave spectrum and the wind velocity: (1) Backscatter from wide areas of the ocean to develop techniques for mapping wind fields, (2) Backscatter from limited areas near research vessels, Navy ships, and ships of opportunity to correlate the observed and radar-measured wind field; (3) Long-term coherent samples of backscatter for high-resolution off-line processing to derive the ocean wave spectrum. (U)

AD-A019 971 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Dredged Rocks from Hatton Bank, Rockall Plateau. (U)

DESCRIPTIVE NOTE: Journal article,
JAN 75 9P Watts,A. B. ;Schreiber,B. C. ;Habib,D. ;
REPT. NO. LDGO-2217
CONTRACT: N00014-67-A-0108-0004, NSF-GA-27281
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of the Geological Society of London, v131 p639-646 1975.

DESCRIPTORS: *Marine geology, *Ocean bottom sampling, *North Atlantic Ocean, *Sedimentary rock, Limestone, Geologic age determination, Geologic formation, Field conditions, Reprints (U)
IDENTIFIERS: Arenite, Hatton Bank(North Atlantic Ocean), Rockall Plateau(North Atlantic Ocean) (U)

Three dredge hauls were obtained in 1973 by R/V Vema from the northern slopes of Hatton Bank. The most common rock types in each haul are arkosic and subarkosic arenite. The arkosic arenite is associated with other sedimentary rocks which include fossiliferous oolitic limestones. The age range of the limestones inferred from palynology is Cretaceous-Palaeogene. That these rocks are of local origin and that they were formed near the margin of a shallow-water basin during the early separation of Rockall Plateau and Greenland are hypothesized. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A019 908 8/3
ALASKA UNIV COLLEGE INST OF MARINE SCIENCE

Internal Gravity Waves in the Ocean. (U)

DESCRIPTIVE NOTE: Marine Science series Volume 2,
75 280P Roberts,Jo ;
REPT. NO. ISBN-0-8247-6226-6
CONTRACT: N00014-67-A-0317-0002

UNCLASSIFIED REPORT
Availability: Paper copy available from Marcel Dekker, Inc., 270 Madison Ave., New York, N.Y. 10016. PC$23.50.
SUPPLEMENTARY NOTE: Library of Congress Catalog Card No. 74-78969.

DESCRIPTORS: *Ocean waves, *Internal waves, Books, Gravity waves, Maps, Differential equations, Tables(Data), Inertia, Air water interactions, Theorems, Wind, Barometric pressure, Stratification, Equations of motion, Ocean bottom topography, Resonance, Stability, Ocean currents, Damping, Mixing, Test equipment, Microstructure (U)

;Contents: Observations and analysis of internal waves; Generation of internal waves; Theory of propagating and standing internal waves over a horizontal ocean floor; Secondary effects. (U)

AD-A019 621 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Monthly Mean Sea Surface and Subsurface Temperature and Depth of the Top of the Thermocline - Red Sea. (U)

DESCRIPTIVE NOTE: Technical note, SEP 73 126P Robinson,Margaret ;
CONTRACT: N00014-75-C-0152

UNCLASSIFIED REPORT
Availability: Pub. in Fleet Numerical Weather Central Technical Note 73-4 Revised.
SUPPLEMENTARY NOTE: Supersedes Rept. no. FNWC TN-73-4 dated Sep 73, AD-A001 435.

DESCRIPTORS: *Red Sea, *Bathythermograph data, *Thermoclines, Seasonal variations, Sea water, Surface temperature, Subsurface, Ocean surface, Temperature, Charts, Spatial distribution, Time dependence, Circulation, Data processing, Reprints (U)

A revision of this atlas of mean monthly sea temperature charts at the surface and five subsurface levels for the Red-Sea wil become a part of an atlas covering the Atlantic Ocean and adjacent seas, 100 degrees W - 45 degrees E, although from an oceanographic standpoint the Red Sea should be considered with the Gulf of Aden and Arabian Sea. (Author) (U)

AD-A019 463 17/1 8/3 4/2
NATIONAL ACADEMY OF ENGINEERING WASHINGTON D C

Directions for Data Buoy Technology 1978-1983 Panel on Buoy Technology Assessment Marine Board. (U)

74 107P

UNCLASSIFIED REPORT
Availability: No copies furnished by DDC.

DESCRIPTORS: *Buoys, *Oceanographic data, *Meteorological data, Deep oceans, Lakes, Military operations, Shallow water, Coastal regions, Data processing, Planning, Navigation, Communication equipment, State of the art (U)
IDENTIFIERS: *Data buoys (U)

Buoys are multi-use platforms. The most numerous and familiar buoys -- those used for navigation -- are not dealt with here, although much of the technology described is common to all buoys. This report addresses itself to the environmental data buoys now being used in increasing numbers to provide meteorological and oceanographic data from lakes, estuaries, coastal waters, and the deep ocean. This report makes no effort to compare or evaluate the merits of data buoys versus other means of environmental data collection, or to establish or define particular needs for data buoys. Environmental and data needs are currently evolving, and the total requirements for many current or probable users have not been fully established. For the purposes of this report, a need is assumed for data buoys in environmental prediction, military operations, and scientific support, with 1973 as the reference year, and 1978-83 as the projection years. (U)

AD-A019 087 8/10 8/7
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Granitic to Ultramafic Rock Complexes of the Indian Ocean Ridge System. Western Indian Ocean, (U)

DEC 74 28P Engel,Celeste G. ;Fisher, Robert L. ;
CONTRACT: N00014-75-C-0152, NSF-GA-23335

UNCLASSIFIED REPORT
Availability: Pub. in Geological Society of America Bulletin, v86 p1553-1578 Nov 75.

DESCRIPTORS: *Igneous rock, *Ocean ridges, *Indian Ocean, Sampling, Granite, Basalt, Bathymetry, Dredging, Earth crust, Earth mantle, Faults(Geology), Volcanoes, Magnetometry, Seismic reflection, Ocean bottom sampling, Ocean bottom topography, Oceanic crust, Reprints (U)

During five expeditions of the Scripps Institution of Oceanography to the western Indian Ocean, more than 4,500,000 sq km of the Central Indian Ridge and its branching Southwest Indian Ridge were explored by bathymetric, magnetic, and seismic-reflection profiling. In some 2,800,000 sq km of this region, igneous rocks of the crust, lower crust, and possible upper mantle are exposed by faulting or volcanism. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A018 920 8/10
UNIVERSITY OF SOUTH FLORIDA ST PETERSBURG DEPT OF MARINE SCIENCE

Anomalous Water Temperatures over Mid-Atlantic Ridge Crest at 26 Deg North Latitude, (U)

AUG 74 11P Rona,Peter A. ;McGregor, Bonnie A. ;Betzer,Peter R. ;Bolger,George W. ;Krause,Dale C. ;
CONTRACT: N00014-72-A-0363-0001
PROJ: NR-083-282

UNCLASSIFIED REPORT
Availability: Pub. in Deep-Sea Research, v22 p611-618 1975.

DESCRIPTORS: *Sea water, *Temperature, *North Atlantic Ocean, Ocean ridges, Anomalies, Heat transfer, Vertical orientation, Hydrodynamics, Marine geology, Ocean bottom topography, Reprints (U)
IDENTIFIERS: Mid-Atlantic Ridge (U)

Two positive temperature anomalies with different characteristics were measured in the water over the walls of the rift valley of the Mid-Atlantic Ridge at 26 deg N latitude. A water temperature profile parallel to the ocean bottom was made with three thermistors mounted in a 4 m long vertical array on a towed deep-sea camera over a hydrothermal mineral deposit, the TAG Hydrothermal Field, situated on the southeast wall of the rift valley. It revealed an abrupt anomaly of + 0.11 C associated with an inverse gradient of 1/8000 C/m within 20 m of the bottom along a horizontal distance of about 350 m between water depths of 3030 and 2950 m. Over the northwest wall of the rift valley, a vertical water temperature profile measured with reversing thermometers revealed a relative warming of 0.20 C between 2000 m and the ocean bottom at 2508 m. Either conductive transfer of heat or discharge of hydrothermal solutions from the ocean bottom could be the heat source for the observed temperature anomalies. The different geologic setting in the two areas suggests that the anomaly over the southeast wall is due to the discharge of hydrothermal solutions; (U)

AD-A018 902 8/3 8/10
ROSENSTIEL SCHOOL OF MARINE AND ATMOSPHERIC SCIENCE MIAMI FLA

Florida Current Energetics Study: Frontal Zone Observations. (U)

DESCRIPTIVE NOTE: Scientific rept., OCT 75 153P Curtin,Thomas B. ;Lee, Thomas N. ;Mooers,Christopher N. K. ;
REPT. NO. UM-RSMAS-75044
CONTRACT: N00014-75-C-0173-8918, NOAA-N22-102-72(G)

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Oceanographic data, *Florida, Oceanographic ships, Coastal regions, Profiles, Time series analysis, Data processing, Tables(Data), Surveys, Measurement (U)
IDENTIFIERS: Virginia Key Vessel, Florida Current (U)

The objectives of the data report are to provide documentation and graphic illustration of the total accumulated data set acquired during an investigation of the vertical structure of the frontal zone on the cyclonic side of the Florida Current. Beyond error evaluation and contoured fields, no interpretation of the data is provided. The report is intended to serve as a convenient manual for making decisions on selective data analyses from the complete data set. The report includes data from a series of cruises of the R/V VIRGINIA KEY during March and April, 1974. These cruises constituted part of the Florida Current energetics study and the frontal spin-off eddy observational program. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A018 763 8/10 8/12 8/13
WASHINGTON UNIV SEATTLE APPLIED PHYSICS LAB

Marginal Sea Ice Zone Oceanographic Measurements, Bering and Chukchi Seas, 1973 and 1974, (U)

SEP 75 161P Garrison,G. R. ;Becker,P. ;
REPT. NO. APL-UW-7505
CONTRACT: N00123-74-C-2064
PROJ: ZF52-555
TASK: ZF52-555-001

UNCLASSIFIED REPORT

DESCRIPTORS: *Sea ice, *Chukchi Sea, *Bering Sea, Thermal properties, Microstructure, Straits, Ocean currents, Fluid flow, Heating, Sea water, Oceanographic data, Surveys, Intrusion, Arctic regions, Underwater sound, Alaska (U)
IDENTIFIERS: Bering Strait, Wrangel Island, Barrow(Alaska) (U)

Oceanographic surveys were conducted in the Bering Sea, the Bering Strait and the Chukchi Sea to study the summer intrusion of warm water into the Chukchi Sea. The northward movement of warmed Bering Sea water starts early in July and enters the Chukchi Sea in two areas: A narrow current along the coast which normally proceeds past Barrow, and a broad flow northward which passes to the east of Wrangel Island and gradually spreads into a thick surface layer across the Chukchi Sea. The zone of contact between intrusion and existing arctic water contains the thermal microstructure that is such a problem to the acoustician. The intrusion appears to stop in September as the surface-cooled waters begin to spread southward. Thermal microstructure also appears near Barrow in the spring as the deeper Atlantic water rises and partially mixes with the colder arctic water. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A018 730 8/12 8/10
WASHINGTON UNIV SEATTLE DEPT OF ATMOSPHERIC SCIENCES

Annual Report Number 7. (U)

DESCRIPTIVE NOTE: Rept. for 1 Oct 74-30 Sep 75,
DEC 75 31P Untersteiner,Norbert ;Maykut,
Gary ;Martin,Seelye ;
CONTRACT: N00014-67-A-0103-0007
PROJ: NR-307-252

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Annual Report No. 6, AD-A003 606.

DESCRIPTORS: *Sea ice, *Oceanographic data, Ocean models, Thermodynamics, Optical properties, Desalination, Entrainment, Melting, Growth(General), Ablation, Sea water, Petroleum products, Interactions, Power spectra, Heat exchangers, Thickness, Distribution, Arctic Ocean, Melting, Internal waves, Light transmission, Ocean waves, Drag (U)
IDENTIFIERS: Pressure ridge keels (U)

During the past year research efforts have been concentrated in the following general areas: (1) theoretical modeling of the dynamics and thermodynamics of sea ice, with particular emphasis on the role of young ice, (2) optical properties of sea ice and their effects on ocean/atmosphere energy exchange, (3) desalination and entrainment processes in both growing and melting ice, and (4) ablation of horizontal, vertical and sloping ice walls by sea water near the freezing point. Scientific results of laboratory and theoretical studies on the interaction of petroleum with sea ice, the disalination of young ice, the drag on moving pressure ridge keels due to the formation of internal waves near the pycnocline, the spectral distribution of short-wave radiation in the ocean beneath the first year sea ice, the dependence of heat exchange over young sea ice on its thickness, and the thickness distribution of sea ice in the Central Arctic have been written up and are now either in print or in press. Other papers describing the optical properties of sea ice, the melting of fresh ice by warm sea water, the observed generation of internal waves in the Arctic Ocean by pressure ridge keels, (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A018 724 8/10 9/2
COAST GUARD WASHINGTON D C OCEANOGRAPHIC UNIT

Coast Guard Oceanographic Unit DDP-516 Programs. (U)

DESCRIPTIVE NOTE: Technical rept.,
JUN 73 33P Hislop,A. S. ;
REPT. NO. CGOU-TR-73-2

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Computer programs, Oceanographic ships, Coast Guard, Data reduction, Real time, Data processing equipment, Interpolation, Subroutines (U)
IDENTIFIERS: DDP-516 computer programs, DOT/IZ/IA (U)

The DDP-516 OCEANOGRAPHIC PROGRAMS were written to aid in the reduction of data both on ships equipped with a DDP-516 and at the U.S. Coast Guard Oceanographic Unit. These programs may be used for real-time data reduction or as a check on previously processed data. (Author) (U)

UNCLASSIFIED /Z0M07

AD-A018 723 8/10
COAST GUARD WASHINGTON D C OCEANOGRAPHIC UNIT

Test Results of the Plessey Model 9040 S/T/D Environmental Profiling System. (U)

DESCRIPTIVE NOTE: Technical rept., MAY 75 20P
REPT. NO. CGOU-TR-75-3

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Ocean models, *Salinity, *Thermoclines, *Ocean environments, Depth, Variations, Standard deviation, Oceanographic equipment, Calibration, Corrections (U)
IDENTIFIERS: Plessey model 9040 (U)

During January 1972, 17 STD casts were taken under controlled conditions using Plessey's Model 9040 S/T/D Environmental Profiling System (STD) in an attempt to determine how the temperature and/or salinity corrections vary with depth. The data indicated that the differences between the quality control salinity values and the salinity values obtaines from the STD system varies by less than 0.02 ppt from the surface down to 3000 meters. However, this correction value was offset from zero by about 0.05 ppt. The temperature correction varied considerably with depth, (about 0.07 deg C), these variations being outside of the manufacturer's specifications. After applying a correction published by the manufacturer, differences between actual depth and recorded depth were generally within instrument accuracy. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0MO7

AD-A018 496 8/7 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Late Quaternary Depositional Processes on Continental Rise of Western Equatorial Atlantic: Comparison with Western North Atlantic and Implications for Reservoir-Rock Distribution. (U)

DESCRIPTIVE NOTE: Journal article, DEC 74 12P Damuth,John E. ;Kumar, Naresh ;
REPT. NO. LDGO-2251
CONTRACT: N00014-67-A-0108-0004, NSF-GX-34410
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in American Association of Petroleum Geologists Bulletin, v59 n11 pt1 p2172-2181 Nov 75.

DESCRIPTORS: *Marine geology, *Ocean bottom, *Atlantic Ocean, *Sedimentation, Ocean bottom topography, Clay, Sand, Silt, Continental shelves, Thermoclines, Ocean currents, Rock, Reprints (U)
IDENTIFIERS: Quaternary sedimentation (U)

The latest Pleistocene continental-rise sediments of the western Equatorial Atlantic are composed of (1) hemipelagic clay rich in terrigenous silt and organic detritus, and (2) redeposited terrigenous silt/sand beds up to several meters thick. The abundance, thicknesses, structures, textures, and compositions of the redeposited silt/sand beds indicate that the continental rise has been shaped largely by deposition from turbidity currents and related mass flows. In contrast, previous investigators have demonstrated that the continental rise of the western North Atlantic has been shaped largely by deposition from geostrophic contour currents. Thus, although both the Equatorial and North Atlantic rises are on the western side of the ocean basin, receive large influxes of terrigenous sediment, and have similar late Pleistocene sedimentation rates, the two continental rises have very different sedimentary histories.

(U)

AD-A018 489 20/4 8/3
FLORIDA STATE UNIV TALLAHASSEE DEPT OF OCEANOGRAPHY

Mixing of Renewal Water Flowing into the Caribbean Sea. (U)

OCT 75 16P Sturges,Wilton ;
REPT. NO. 133
CONTRACT: N00014-67-A-0235-0002
PROJ: NR-083-231

UNCLASSIFIED REPORT

Availability: Pub. in Jnl. of Marine Research, Supplement, v33 p117-130 1975.
SUPPLEMENTARY NOTE: Prepared in cooperation with Rhode Island Univ., Kingston Graduate School of Oceanography, Contract N00014-68-A-0215-0003.

DESCRIPTORS: *Hydrodynamics, *Ocean currents, *Caribbean Sea, Mixing, Boundary layer, Entrainment, Volume, Flux(Rate), Ocean bottom, Flow rate, Oceanographic data, Reprints (U)
IDENTIFIERS: Richardson number, Jungfern passage sill (U)

Observations with moored current meters and STD sections in the Jungfern Passage sill during February 1971 show inflow of 50,000 cu m/sec; 5 km downstream, the entrainment of resident water has increased the volume flux by 40%. At times the inflow ceased; the current-meter records suggest a periodicity of approximately two weeks. The inflowing water at the sill is 0.25 to 0.3 C colder than the basin water at sill depth. This signal is eroded to approximately 0.06 C at the downstream section. A clear feature of the observations is that as the flow approaches a geostrophic balance, a bottom boundary layer stretches the flow out on the downslope side, while veering (in the opposite sense) in an upper boundary layer thickens the fluid on the upslope side. To within the accuracy of the observations and the averaging used, the entrainment, as a function of overall Richardson number, is predicted well by the laboratory experiments of Ellison and Turner. (Author) (U)

AD-A018 421 8/3 13/2
ARMY ENGINEER WATERWAYS EXPERIMENT STATION VICKSBURG MISS

Type 16 Flood Insurance Study: Tsunami Predictions for Monterey and San Francisco Bays and Puget Sound. (U)

DESCRIPTIVE NOTE: Final rept.,
NOV 75 271P Garcia,Andrew W. ;Houston, James R. ;
REPT. NO. WES-TR-H-75-17

UNCLASSIFIED REPORT

DESCRIPTORS: *Earthquakes, *Ocean waves, *San Francisco Bay, *Puget Sound, Seismic waves, Harbors, Tides, Predictions (U)
IDENTIFIERS: *Tsunamis, *Monterey Bay, *Runup (U)

Calculations of runup due to seismic sea waves (tsunamis) of distant origin were made for Monterey and San Francisco Bays and the greater part of Puget Sound. Those areas which are specifically included and excluded are listed. The values presented are interpreted as being equaled or exceeded on the average of once per 100 (R100) or one per 500 (R500) yr, whichever is indicated. All runup values, R100 and R500, are referenced to the mean sea level datum. The combined effects of astronomical tides and tsunamis are incorporated into the analysis as are certain local effects. The effects of wind waves superimposed on the tsunami have been neglected. The simultaneous occurrence of a storm surge and tsunami is considered highly improbable and therefore unlikely to constitute a 1 in 100- or 1 in 500- yr. event. (U)

AD-A018 221 8/3
OREGON STATE UNIV CORVALLIS SCHOOL OF OCEANOGRAPHY

Exposure. A Newsletter for Ocean Technologists. Volume 3, Number 5. (U)

DESCRIPTIVE NOTE: Technical rept., NOV 75 13P Mesecar,Roderick ;
CONTRACT: N00014-67-A-0369-0007
PROJ: NR-083-102

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-A015 327.

DESCRIPTORS: *Oceanography, *Oceanographic data, Current regulators, Pressure gages, Conductivity, Flowmeters, Ocean currents, Electronic equipment, Instrumentation (U)

On a recent cruise aboard Oregon State University's R. V. Yaquina, Aanderaa current meters were lowered along with a Geodyne CTD to determine whether the calibration of the Aanderaa conductivity cell was pressure dependent. Two current meters, 268 and 755, were selected from a group of twenty and tested in this manner. Current meter 268 showed no evidence of any air space between the conductivity cell and its glass liner. Current meter 755 showed air space over about 60 percent of the area behind the glass liner. These current meters were selected because we expected cells with less air space to show less conductivity change under pressure, and cells with more space to change more. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A018 133 8/3 8/10 4/2
NAVAL RESEARCH LAB WASHINGTON D C

Ocean Sciences Division: Recent Developments in Instrumentation and Techniques (U)

DESCRIPTIVE NOTE: Final rept., NOV 75 25P Nekritz,Richard ;
REPT. NO. NRL-MR-3150

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanography, *Oceanographic equipment, Oil spills, Pollution abatement, Containment(General), Electrodes, Ions, Selection, Sediments, Toxicity, Test methods, Ocean currents, River currents, Humidity, Measuring instruments, Dyes, Detector arrays, Detectors, Air mass analysis, Radon, Isotopes, Telemeter systems, Weather, Magnetometers, Ocean bottom, Marine meteorology, Measurement (U)

Since 1966, when the Ocean Sciences Division originated, its scientists have developed a variety of instruments and techniques to apply to their studies of marine chemistry, air-sea interactions, air-mass trajectories, fog generation, pollution, and ocean turbulence. This report describes several of these developments, some of which may be applicable to the scientific or technical problems of other investigators. (Author) (U)

AD-A018 066 8/10 14/5
NAVAL RESEARCH LAB WASHINGTON D C

Preliminary LIBEC/FAMOUS Cruise Results. (U)

DESCRIPTIVE NOTE: Final rept.,
SEP 75 34P Brundage,Walter L. , Jr.;
Cherkis,Norman Z. ;
REPT. NO. NRL-7785
PROJ: NRL-S01-73, NRL-G05-18

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean bottom topography, *Underwater photography, *Underwater cameras, *Marine geology, Atlantic ocean, Azores, Sediments, Sedimentation, Tectonics, Volcanoes, Valleys, Histograms, Oceanographic data (U)
IDENTIFIERS: Famous project, *Flores Island(Atlantic Ocean), *Libec cameras, LIBEC(Light Behind Cameras), Mid-Ocean ridge(Atlantic Ocean), Plate tectonics, Rift valleys (U)

Analysis of 4882 LIBEC(LIght BEhind Camera) photographs from the Project FAMOUS (French-American Mid-Ocean Undersea Study) median rift valley reveal linear features and bottom surface types. The distribution of the strike of linear fissures and steps on the flat valley floor tends to cluster at N-20 deg E the local strike of the valley. The high topography at the valley axis is dominated by thinly sedimented pillow lava on scarp shoulders and by talus on and at the base of steep surfaces. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A017 874 8/12 15/5
OFFICE OF NAVAL RESEARCH BRANCH OFFICE PASADENA CALIF

A Study to Provide Sea Access by Marine Craft for the Naval Arctic Research Laboratory, (U)

OCT 75 36P Cagle,Ben ;
REPT. NO. ONRBRO/P-10-75
PROJ: NR-307-106

UNCLASSIFIED REPORT

DESCRIPTORS: *Sea ice, *Navigation, *Arctic Ocean, *Chukchi Sea, Amphibious ships, Boats, Naval operations, Surveys, Logistics planning, Coastal regions, Alaska (U)
IDENTIFIERS: *Beaufort Sea (U)

A study and field survey was performed to provide the Naval Arctic Research Laboratory with marine craft for sea access during ice-free periods in the Beaufort and Chukchi Seas. Operating conditions were reviewed and recommendations were made on the type of boat and method of operation. (U)

AD-A017 810 20/1 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Fluctuations of Narrow-Band Sound Amplitudes from Long-Range Transmissions in the Deep Atlantic Ocean. (U)

DESCRIPTIVE NOTE: Technical rept., MAR 75 15P Baxter,Lincoln , II;Yang, C. Y. ;
REPT. NO. WHOI-Contrib-3527, WHOI-75-49
CONTRACT: N00014-70-C-0205
PROJ: NR-083-325

UNCLASSIFIED REPORT

Availability: Pub. in Jnl. Acoustical Society of America, v58 n3 p595-603 Sep 75.

DESCRIPTORS: *Sound transmission, *Oceanographic data, Deep oceans, Narrowband, Long range(Distance), Hydrophones, Amplitude, Atlantic ocean, Gravity waves, Profiles, Acoustics, Reprints (U)
IDENTIFIERS: Fluctuations, Sofar, Most Project-2 (U)

For transmission paths between a fixed acoustic source at 527-m depth near Eleuthera and a fixed receiver at 1723 m near Bermuda, G. E. Stanford (J. Acoust. Soc. Am. 55, 968-977 (1974)) has shown that the spectrum of fluctuations in acoustic intensity in nearly flat up to 3 cycles/h and drops off as 1/cuf above this frequency. For comparison with internal gravity wave disturbances of the sound velocity profile, we have analyzed amplitude fluctuations of transmissions from floats deployed as part of the 1973 series of Mid-Ocean Dynamics Experiments (MODE). These floats carrying 30-W input, 270-Hz sound sources pulsed for 1.67 sec at 3-min intervals were released to drift near 26 deg N, 70 deg W at a depth of approximately 1500 m. The transmissions were received by fixed hydrophones (MILS system), located on the sound channel axis on the slopes of Eleuthera and Grand Turk. We find a spectrum similar to that of Stanford except that the 1/cuf characteristic begins at 1 cycle/h. For each experiment, this rolloff frequency coincides approximately with the Brunt-Vaisala frequency at the turning points of those SOFAR paths with minimum excursion from the axis. (Author) (U)

AD-A017 567 8/10 8/2
RAND CORP SANTA MONICA CALIF

A New (Revised) Tabulation of the Scripps Topography on a 1 degree Global Grid. Part II. Ocean Depths, (U)

OCT 75 139P Gates,W. L. ;Nelson,A. B. ;
REPT. NO. R-1277-1-ARPA
CONTRACT: DAHC15-73-C-0181, ARPA Order-189-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Part I, AD-A017 560. Supersedes report dated Nov 73, AD-780 325.

DESCRIPTORS: *Ocean bottom topography, *Oceanographic data, *Bathymetry, Depth, Global, Tables(Data), Statistical data, Islands, Lakes, Coastal regions (U)

A revision and retabulation of world-wide ocean depth data originally prepared at the Scripps Institution of Oceanography is given. Revisions to the original data include the redefinition of coastal regions and the insertion of islands and lakes; no revision has been made in the remaining oceanic depths. The newly formatted global 1-deg tabulations of ocean depth are supplemented by a global analysis, frequency histograms, and zonal averages. (U)

AD-A017 236 8/3
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Intermediate and Deep Current Measurements in the Northeast Pacific Ocean. (U)

DESCRIPTIVE NOTE: Final technical rept.,
JUL 75 37P Earle,Marshall D. ;
REPT. NO. NOO-TR-232
PROJ: R24-08, R24-09

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Internal waves, *North Pacific Ocean, Power spectra, Flowmeters, Spectrum analysis, Deep water, Time series analysis, Measurement (U)

Ocean currents were measured in the central northeast Pacific, from 30 degrees N to 40 degrees N and 140 degrees W to 150 degrees W, with nine arrays of moored current meters during autumn 1973. Current meter records at depths from 700 m to 5420 m were analyzed to determine the characteristics of intermediate and deep currents within the central northeast Pacific. The currents in this region have very low speeds which generally decrease with increasing depth. Contributions to the time-dependent currents are primarily from oscillatory motions at the local inertial frequencies and the semidiurnal tidal frequency. Spectral analysis indicates that tidal frequency motion is essentially due to baroclinic internal tides and not barotropic surface tides. (U)

AD-A016 731 8/12
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

Toward an Ice-Free Arctic Ocean. (U)

DESCRIPTIVE NOTE: Technical rept.,
75 5P Aagaard,K. ;Coachman,L. K.
;
REPT. NO. TR-15
CONTRACT: N00014-67-A-0103-0021
PROJ: NR-307-326

UNCLASSIFIED REPORT
Availability: Pub. in EOS, Transactions, American Geophysical Union, v56 n7 p484-486 Jul 75.

DESCRIPTORS: *Sea ice, *Arctic Ocean, Circulation, Salinity, Stratification, Convection(Heat transfer), Sea water, Temperature, Rivers, Siberia, Diverting, Heat flux, Reduction, Reprints (U)
IDENTIFIERS: Ice free areas, Ocean basins (U)

The strong salinity stratification of the Arctic Ocean prevents substantial ice-free conditions in winter by suppressing convection and reducing upward heat flux from the Atlantic Water. These conditions would be significantly altered in the sensitive southern Eurasian basin if suggested diversions of western Siberian rivers were accomplished. (Author) (U)

AD-A016 291 8/3 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Profiles of Transport, Current and Temperature in the MODE Areas of the North Atlantic. (U)

DESCRIPTIVE NOTE: Technical rept. Sep 71-Jul 75, JUL 75 42P Pochapsky,T. E. ;Malone,F. D. ;
REPT. NO. TR-2, TR-1
CONTRACT: N00014-67-A-0108-0011, NSF-GX-30987
PROJ: NR-083-243

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Oceanographic data, *North Atlantic Ocean, Profiles, Temperature gradients, Echo ranging, Depth, Thermoclines, Floats, Transponders, Telemetering data, Grap (U)
IDENTIFIERS: International Decade of Ocean Exploration (U)

Measurements of the transport and temperature as a function of depth were obtained at two locations in the Nortn Atlantic during the MODE experiments of the IDOE. Vertical profiles of the current as well as hodographs were determined from these. Acoustic ranging was used for the flow measurements based on techniques developed in the instrumented float program on the senior author. The results of these measurements are presented in graphical form for experiments at 28 degrees N, 68.7 degrees W during a 4-day operation in 1972 and at 27.9 degrees N. 69.7 degrees W for a 11-day sequence in 1973. Profiling drops are described individually along with experimental or analytical factors affecting specific profiles. This report is a distillation of the measurements only and avoids interpretations of their significance. (U)

AD-A016 290 8/10 4/2
CITY COLL NEW YORK

Seasonal Changes of Oceanographic and Marine-Climatological Conditions in the Equatorial Atlantic. (U)

DESCRIPTIVE NOTE: Final rept., AUG 75 221P Neumann,Gerhard ;Beatty, William H. , III;Escowitz,Edward C. ;
CONTRACT: N00014-72-A-0406-0007
PROJ: NR-083-307

UNCLASSIFIED REPORT

DESCRIPTORS: *Marine meteorology, *Oceanographic data, *Atlantic Ocean, Ocean surface, Surface temperature, Evaporation, Salinity, Atmospheric precipitation, Equatorial regions, Seasonal variations, Harmonic analysis, Graphs, Meteorological charts (U)

An attempt is made to construct more detailed *monthly charts for sea surface temperature*, salinity, evaporation and precipitation, based on climatological averages for 2 degrees squares betweem 10N and 10 degrees S. This space and time resolution, at least, is required to study the complex climatological and mean oceanographic conditions, and their interrelationships, in an ocean area where significant local differences can occur at distances of a degree or two of longitude or latitude apart, and where semi-annual periodic changes may dominate the seasonal pattern. Of special interest are the relationships between sea surface salinity variations during the year and the differences between evaporation and precipitation. Special attention is given to seasonal variations of sea surface temperature anomalies, surface salinities and precipitation in the 5N to 10 degrees N latitudinal belt. This zonal belt is, essentially, dominated by the Equatorial Countercurrent. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A015 988 8/10 8/7
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Cruise Data Report R/V Chain Cruise 115 Leg 7. (U)

DESCRIPTIVE NOTE: Technical rept., JUL 75 20P Kroll,J. D. ;Gregg,S. R. ;Groman,R. C. ;
REPT. NO. WHOI-75-35
CONTRACT: N00014-74-C-0262, NSF-GX-41960
PROJ: NR-083-004
MONITOR: NSF/IDOE 75-303

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, South Atlantic Ocean, Seismic reflection, Bathymetry, Geomagnetism, Magnetic anomalies, Gravity anomalies, Charts, Profiles, Navigation charts (U)
IDENTIFIERS: Bouguer gravity anomalies, Free air anomalies, Chain vessel, Recife(Brazil), Fortaleza(Brazil) (U)

This report summarizes the geological and geophysical activities which were undertaken during Leg 7 of R/V CHAIN Cruise 115. A series of charts and profiles display the navigation, bathymetry, total field magnetic anomaly, free air and simple Bouguer anomalies, as well as all station locations. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A015 091 8/10 8/7
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

W.H.O.I. Geological Samples Data File. Volume I. 1957 to 1973. (U)

DESCRIPTIVE NOTE: Technical rept., JUL 75 287P Driscoll,Alan H. ;Rush, Susan M. ;
REPT. NO. WHOI-75-37
CONTRACT: N00014-74-C-0262, NSF-DES74-06463
PROJ: NR-083-004

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated Aug 73, AD-766 791.

DESCRIPTORS: *Ocean bottom sampling, *Marine geology, *Digital recording systems, Cores, Geological survey, Computer programming (U)
IDENTIFIERS: MUDDIE program, Digital techniques (U)

The sample information contained in Volume I of the W.H.O.I. Geological Samples Data File represents the first phase in the digitization of the Woods Hole geological samples collection, and includes all samples collected between 1957 and 1973. Additional volumes will be produced at regular intervals as the curation and description of subsequent samples are completed. The volume is designed as a quick reference to the samples within the collection and has been compiled using two of the listing formats available with the MUDDIE Program. These two listings are presented in Sections I and II of this volume. Section I contains an abbreviated listing of the samples in order of their occurrence within specific Marsden squares. Section II of the volume contains a full listing of the samples, arranged by ship and cruise. Appropriate comments relating to specific samples have been included. Within Section II, individual piston cores are represented by two entries. (U)

AD-A014 908 8/10 8/1 13/10 5/9
MAURY CENTER FOR OCEAN SCIENCE WASHINGTON D C

The Ocean Science Program of the U.S. Navy: Accomplishments and Prospects. (U)

JUN 75 132P White,A. E. ;

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanography, *Naval research, *Education, Oceanographic data, Marine engineering, Oceanographic ships, Underwater sound, Oceanographic equipment, Marine geology, Marine biology, Chemical properties, Sea water, Ocean bottom topography, Underwater vehicles, Submersibles, Ocean environments, Data processing, Naval operations (U)

;Contents: History of Navy ocean science; Organizational structure; The Navy ocean science program; Facilities of the ocean science program; The Navy ocean science program and the marine community; Prospects for the future. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A014 876 8/3 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Mooring Operations of the Woods Hole Buoy Group for the Mid-Ocean Dynamics Experiment. (U)

DESCRIPTIVE NOTE: Technical rept., SEP 75 114P Heinmiller,Robert H. , Jr;
REPT. NO. WHOI-75-42
CONTRACT: N00014-74-C0262, NSF-GX-29054
PROJ: NR-083-004
MONITOR: NSF/IDOE 75-304

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Oceanographic data, *Mooring, Mooring buoys, Deployment, Maintenance, Calibration, Recovery, Temperature, Tables(Data), North Atlantic Ocean (U)
IDENTIFIERS: Design (U)

The Moored Array Project (Buoy Group) at the Woods Hole Oceanographic Institution carried out a series of moored-array experiments to measure currents and temperatures as part of the Mid-Ocean Dynamics Experiment (MODE). During the period from October, 1971 to August, 1974, a total of forty-four moorings were deployed. This report summarizes the design, preparation, and field operations involved in the deployment and recovery of these arrays. Tabulations are included of all moorings set. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A014 720 8/10 8/1 20/1 17/1
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Basic Acoustic Oceanography. (U)

DESCRIPTIVE NOTE: Final rept.,
APR 75 83P Schulkin,Morris ;
REPT. NO. NOO-RP-1

UNCLASSIFIED REPORT

DESCRIPTORS: *Acoustics, *Ocean bottom topography, *Marine biological noise, Underwater sound, Acoustic detection, Submarine canyons, Underwater sound equipment, Sound transmission, Deep water, Ocean surface, Ocean waves, Sediments, Acoustic scattering, Transmission loss, Bathymetry, Thermoclines, Equations of state (U)
IDENTIFIERS: Deep scattering layers (U)

A brief introduction is given of oceanography for acousticians. The main topics and related acoustical examples are: Submarine geology (bottom acoustic loss); marine biology (the deep sound scattering layer); chemical and physical properties of seawater (sound speed and sound absorption); the steady state of the ocean (sound speed vs depth structure and modes of sound propagation in the ocean); and waves in the ocean (sea surface loss and sea surface noise, and acoustic propagation and internal waves). (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A014 713 8/10 13/10 5/2
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Catalog of Naval Oceanographic Office Publications. (U)

DESCRIPTIVE NOTE: Special pub.
JUN 75 82P
REPT. NO. NOO-SP-3-P

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Naval research, Catalogs, Scientific research, Marine transportation, Surface temperature, Merchant vessels, Ocean currents, Documents (U)

The catalog is a complete listing of unclassified Naval Oceanographic Office publications available to the public. Included are the following: Hydrographic Office/Naval Oceanographic Office publications (HOP/NOP); Naval Oceanographic Office special publications (SP); Naval Oceanographic Office Technical Reports (TR); Naval Oceanographic Office reference publications (RP); Author index; Title index; Subject index. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A014 570 8/3 8/10
UNIVERSITY OF SOUTHERN CALIFORNIA LOS ANGELES DEPT OF GEOLOGICAL SCIENCES

Applications of ERTS Imagery and Shipboard Observations to Coastal Environments Studies. Part I - Hypersaline Environments. Part II - Coastal Circulation Analysis. (U)

DESCRIPTIVE NOTE: Final technical rept. 1 Jan-31 Dec 74,
AUG 75 42P Gorsline,Donn S. ;Haar, Stephen P. Vonder ;Davis,Corla C. ;
REPT. NO. USC-GEOL-76-1
CONTRACT: N00014-67-A-0269-0009
PROJ: NR-388-108

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Coastal regions, *Oceanographic data, Circulation, Ocean surveillance, Patterns, Transparence, Sea water, Correlation techniques, Scientific satellites, Deposits, Sediments, Floods, Salinity, California, North Pacific Ocean (U)
IDENTIFIERS: Remote sensing, Baja California, Suspended sediments, ERTS-1 satellite, ERTS-2 satellite (U)

Work done during the 1974 included a study of the wetting cycles on tidal and supra-tidal coastal areas of Baja California in arid climatic conditions. Progress on ERTS (LANDSAT) imagery analysis as a basis for describing coastal water circulation patterns includes collection of oceanographic data on water transparency and suspended sediment concentrations from shipboard on the date of satellite passage and comparison of patterns with general circulation as defined by standard oceanographic surveys (source data is from California Cooperative Fisheries Project and from field work aboard R. V. VELERO IV of the University of Southern California). Data show that the satellite imagery gives a higher degree of detail than the ship observations due to the time required for ship traverses and stations and the consequent limitations of resolution. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A014 427 8/10
ENVIRONMENTAL RESEARCH AND TECHNOLOGY INC CONCORD MASS

Mapping of Sea Surface Temperature by the DMSP Satellite. (U)

DESCRIPTIVE NOTE: Final rept.,
MAY 75 82P Cogan,James L. ;Willand, James H. ;
REPT. NO. ERT-1065-F
PROJ: W3713, EPRF-66856
MONITOR: EPRF 7-75(ERT)

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean surface, *Surface temperature, Sea water, Temperature, Infrared radiation, Mapping, Scientific satellites, Maps, Sea states, Radiative transfer, Algorithms, Clouds (U)
IDENTIFIERS: DMSP satellites, *Remote sensing, Atmospheric attenuation (U)

Sea surface temperature (T2) may be inferred from Defense Meteorological Satellite Program (DMSP) satellite measurements of infrared radiances in atmospheric windows if errors in instrumentation, data processing, and satellite orientation are properly accounted for. Even in the absence of clouds, the slight opacity of the atmosphere in the windows causes the temperature 'seen' by the satellite to be lower than that measured by ships or aircraft. Clouds produce the same effect, but generally of a greater magnitude. (U)

AD-A014 415 8/10
COAST GUARD WASHINGTON D C OCEANOGRAPHIC UNIT

Aerial Oceanographic Observations, July 1969 - June 1970, Cape Cod, Massachusetts to Miami, Florida, (U)

JUN 75 32P Deaver,J. W. ;
REPT. NO. USCG-373-68

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean surface, *Surface temperature, *North Atlantic Ocean, Ocean surveillance, Aerial reconnaissance, Thermoclines, Airborne, Thermometers, Gulf Stream, Aquatic animals, Seasonal variations, North Carolina, Coastal regions, Massachusetts, Florida (U)
IDENTIFIERS: Cape Hatteras, Cape Cod, Miami(Florida), DOT/5M (U)

Sea surface temperatures (SST) for July 1969 to June 1970 from Cape Cod, Massachusetts to Miami, Florida were measured during Coast Guard Airborne Radiation Thermometer (ART) monthly surveys. A total of 12 airborne surveys were conducted along more than 6,800 kilometers of transects covering approximately 130,000 square kilometers of Atlantic coastal waters each month. Twelve monthly SST isotherm charts are presented which were contoured from these data. The coastal SST distribution and seasonal variation is analyzed on a time-space grid. The thermal front associated with the Gulf Stream between Cape Hatteras, North Carolina and Miami, Florida was tracked by ART and appeared to parallel the 183 meter isobath. Distributions of certain marine animal are presented as a function of temperature and latitude. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A014 320 8/10
DELAWARE UNIV NEWARK COLL OF MARINE STUDIES

Interpretation of Structures over Oceanic Regions in DMSP Data. (U)

DESCRIPTIVE NOTE: Technical rept., MAY 75 42P Szekielda,Karl-Heinz ;
REPT. NO. CMS-C-1-75
CONTRACT: N66314-74-C-1294
MONITOR: EPRF TR-5-75(UD)

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean surface, *Mexico Gulf, Sea water, Air water interactions, Sea states, Temperature, Wind velocity, Colors, Albedo, Wind direction, Salinity, Chlorophylls, Scientific satellites, Comparison, Sediments, Photographs, Remote detectors (U)
IDENTIFIERS: DMSP satellites, Nimbus 5 satellite, Remote sensing (U)

Images obtained by the Defense Meteorological Satellite Program (DMSP) over the Gulf of Mexico were interpreted. In differentiating the optical characteristics of various targets, hydrography, and the frequency of occurrence of features, it was concluded that structures recognized in the offshore region were not caused by chlorophyll concentration, current boundaries (temperature gradients), sea state, or sediments. It is suggested that the atmosphere might be the significant cause for the structures recognized over cloud-free regions by the DMSP. This conclusion will be limited strictly to the case studies presented. (U)

AD-A014 277 8/10
COAST GUARD WASHINGTON D C OCEANOGRAPHIC UNIT

Oceanographic Observations, 1967-69, North Atlantic Standard Monitoring Sections A5, A6, and A7. (U)

DESCRIPTIVE NOTE: Oceanographic rept., SEP 74 314P Robe,R. Q. ;
REPT. NO. USCG-373-67

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *North Atlantic Ocean, Monitoring, Salinity, Temperature gradients, Sea water, Thermoclines, Coastal regions, Depth, Bathythermograph data, Oceanographic ships, Continental slopes (U)
IDENTIFIERS: WHEC 68 vessel, Ocean stations (U)

Data from Standard Monitoring Sections A5, A6, and A7 for the years 1967-69 are presented together with vertical sections of salinity, temperature, and sigma-t. The three major water masses on these Standard Monitoring Sections; Coastal Water, Slope Water, and North Atlantic Central Water; are described. (U)

AD-A014 032 8/3 8/1
LOUISIANA STATE UNIV BATON ROUGE COASTAL STUDIES INST

Physical Processes in a Fringing Reef System. (U)

DESCRIPTIVE NOTE: Technical rept., JAN 75 31P Roberts,Harry H. ;Murray, Stephen P. ;Suhayda,Joseph N. ;
REPT. NO. TR-196
CONTRACT: N00014-69-A-0211-0003
PROJ: NR-388-002

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Marine Research, v33 n2 p233-260 1975.

DESCRIPTORS: *Coral reefs, *Ocean waves, *Ocean currents, Caribbean Sea, Deep water, West Indies, Barbados, Offshore, Shallow water, Sediments, Ocean tides, Tidal currents, Ocean bottom topography, Surface roughness, Modification, Attenuation, Friction, Reprints (U)
IDENTIFIERS: Grand Cayman Island, *Fringing reefs, Lagoons (U)

Field studies primarily on Grand Cayman Island and supporting investigations on Barbados furnished data concerning the magnitudes and spatial gradients of physical processes which interact with typical Caribbean reef systems and their unusual sea floor configurations. In situ measurements from the fore-reef shelf indicate that currents and deepwater waves are significantly modified by reef morphology. Wave heights are reduced 20% over a distance of approximately 0.4 km, whereas a 75% reduction results from breaking processes as waves cross the reef crest and enter the back-reef lagoon. These highly modified waves induce a lagoonal circulation pattern which is reflected in the sediment distribution. Currents on the fore-reef shelf exhibit a distinct periodicity near the diurnal tidal frequency. Rather unidirectional and high-velocity flow (occasionally greater than 50 cm/sec) is characteristic of the deep (21 m) shelf margin, but considerably weaker (average 5-7 cm/sec) and more directionally variable currents are found on the shallow shelf. Current speeds are attenuated by roughly 30% over the narrow shelf. Statistical filtering illustrates that tidal currents are dominant on the shelf, (U)

AD-A013 636 8/1 20/1 17/1
NAVAL UNDERSEA CENTER SAN DIEGO CALIF

FASOR II: Correlative Biological and Acoustical Studies in the North Pacific Ocean. (U)

DESCRIPTIVE NOTE: Interim technical rept., JAN 75 98P Seligman,Peter F. ;Friedl, William A. ;
REPT. NO. NUC-TP-448
PROJ: SR104-03, ZR011-08
TASK: SR104-03-01, ZR011-08-01

UNCLASSIFIED REPORT

DESCRIPTORS: *Marine biology, *Acoustic scattering, *North Pacific Ocean, Underwater sound, Sonar echoes, Underwater sound signals, Deep water, Very low frequency, Acoustic measurement, Sonar equipment, Correlation techniques, Acoustic signatures (U)
IDENTIFIERS: FASOR(Forward Area Sonal Research), Forward area sonar research, Deep scattering layers (U)

An experimental analysis of acoustic and biological measurements collected during a Forward Area Sonar Research (FASOR) Cruise in the North Pacific Ocean (Feb. through Jul. 1966) is presented. Specifically, the relationship among biological samples, acoustical phenomena of echo groups, 12 kHz scattering layers, and 3 and 12 kHz volume scattering measurements, and water mass characteristics is investigated. Studies delineate eight oceanic regions as distinctive in biological and acoustic character (signature). General results are discussed. (U)

AD-A013 231 8/10 8/7 8/4
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Cruise Data Report R/V Chain Cruise 115 Leg 5 Southlant Expedition. (U)

DESCRIPTIVE NOTE: Technical rept., MAY 75 32P Groman,R. C. ;Gegg,S. R. ;Kroll,J. D. ;
REPT. NO. WHOI-75-29
CONTRACT: N00014-74-C-0262, NSF-GA-36604
PROJ: NR-083-004

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, Navigation charts, Bathymetry, Geomagnetism, Magnetic anomalies, Gravity anomalies, Oceanographic ships, pH factor, Heat transfer, Ocean bottom, Measurement, Seismic reflection, South Africa, Brazil, South Atlantic Ocean, Marine geology (U)
IDENTIFIERS: Chain Vessel, Bouguer gravity anomalies, Free air anomalies, Southlant Expedition (U)

The report summarizes the geochemical, geological and geophysical activities which were undertaken during Leg 5 of R/V CHAIN Cruise 115. A series of charts and profiles display the navigation, bathymetry, total field magnetic anomaly and free air gravity anomaly measurements, as well as the locations of geochemical and geophysical stations. (U)

AD-A012 664 8/10 20/6
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

A Chronological Study of the Measurement of the Optical Properties of Ocean Water and an Atlas of the Diffuse Attenuation Coefficient, 'k', of Tropical Atlantic Ocean Water. (U)

DESCRIPTIVE NOTE: Technical rept., JUN 75 85P Stentz,Donald A. ;
REPT. NO. NPS-52Sz75061

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Original contains color plates: All DDC reproductions will be in black and white.

DESCRIPTORS: *Sea water, *Light transmission, *Atlantic Ocean, Attenuation, Coefficients, Optical properties, Light scattering, Tropical regions, Oceanography, Oceanographic data, Absorption spectra, Wavelengths, Thermoclines, Maps, Graphs (U)
IDENTIFIERS: Secchi depth (U)

This report is a chronologic study of the measurement and methods of presentation of certain optical parameters of sea water. Of particular interest is the diffuse attenuation coefficient, k, and its relationship to the Secchi depth and the temperature profile of the water column. An Atlas of the diffuse attenuation coefficient for the tropical Atlantic Ocean is presented. The report contains some conclusions regarding these relationships and methods of presentation of optical data as these apply to the ORICS program. (Author) (U)

AD-A012 482 8/10 20/1 17/1
SCRIPPS INSTITUTION OF OCEANOGRAPHY SAN DIEGO CALIF MARINE PHYSICAL LAB

Current Major Projects of the Marine Physical Laboratory. (U)

DESCRIPTIVE NOTE: Summary rept. MAY 75 19P
REPT. NO. MPL-U-44/75, SIO-Ref-75-16
CONTRACT: N00014-69-A-0200-6002
PROJ: NR-260-103

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Underwater sound, Sound transmission, Acoustic arrays, Ocean bottom topography, Signal processing, Internal waves, California, Echo ranging, Scientific research, Underwater sound equipment, Deep water, Towed bodies, Shallow water, Acoustic detection, Infrasonics, Low frequency (U)
IDENTIFIERS: San Diego(California), Most project-1 (U)

The report describes the early 1975 status of major research programs at the Marine Physical Laboratory of Scripps Institution of Oceanography, University of California, San Diego. The work is conducted in the four general areas of Ocean Acoustics, Sea Floor Studies and Technology, Signal Processing, and Environmental Studies. Special facilities used in the MPL research programs are described briefly. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A012 378 8/10 9/2
SACLANT ASW RESEARCH CENTRE LA SPEZIA (ITALY)

The SACLANTCEN Shipborne Computer Environmental Data Acquisition System. Volume 4. On-Line Data Acquisition of XBT Temperature Profiles. (U)

DESCRIPTIVE NOTE: Memorandum rept., JUN 75 34P Gehin,Claude ;Martinelli, Giovanna ;Menelli,Mario ;Spina,Francesco ;
REPT. NO. SACLANTCEN-SM-70

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-760 186. NATO furnished.

DESCRIPTORS: *Data processing, *Oceanographic data, Data acquisition, Thermoclines, On line systems, Bathythermograph data, Computer programs, Italy (U)

An automatic environmental data-logging and computing system installed on board SACLANTCEN's research vessel is described in a series of memoranda. This memorandum of the series describes an automatic system for contemporaneously storing and plotting temperature profiles measured by expendable bathythermograph (XBT) while the ship is underway. The stored temperature data are available for use in other programs of the system. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A012 351 8/10 6/6 8/1 13/2
COAST GUARD WASHINGTON D C OCEANOGRAPHIC UNIT

WEBSEC-71-72, An Ecological Survey in the Beaufort Sea. (U)

DESCRIPTIVE NOTE: Oceanographic rept. no. 64 Aug-Sep 71-72,
SEP 74 282P Hufford,Gary L. ;Fortier, Scott H. ;Wolfe,Daniel E. ;Doster,James F. ;Noble,Dennis L. ;
REPT. NO. USCG-373-64

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Marine biology, *Ecology, *Arctic Ocean, Bathythermograph data, Chemical properties, Marine geology, Water pollution, Petroleum products, Salinity, Ocean currents, Sea ice, Surface temperature, Oxygen, Wind, Phosphates, Silicates, Nitrates, Sediments, Particle size, Minerals, Oceanographic ships (U)
IDENTIFIERS: *Beaufort Sea, AGB4 vessel, *Baseline studies, Natchik vessel, Dissolved oxygen, DOT/5C, DOT/4GZ/GY (U)

The report contains a collection of scientific papers from two successive marine ecological baseline cruises to the Western Beaufort Sea (August-September, 1971 and 1972). Preliminary results of the physical, chemical, biological, and geological data are presented and interpreted. The results indicate that the data were collected in a marine ecosystem that is still in a relatively unpolluted state. The data should provide a base for assessing the affects of pollution from future development, especially from petroleum. (U)

AD-A012 035 8/3 4/1 20/1
NEW YORK UNIV N Y COURANT INST OF MATHEMATICAL SCIENCES

Uniform Ray Theory of Surface, Internal and Acoustic Wave Propagation in a Rotating Ocean or Atmosphere, (U)

OCT 73 20P Shen,M. C. ;Keller,J. B. ;
REPT. NO. NYU-ONR-H53
CONTRACT: N00014-67-A-0467-0006, NSF-GP-28699
PROJ: NR-041-361

UNCLASSIFIED REPORT
Availability: Pub. in SIAM Jnl. on Applied Mathematics, v28 n4 p857-875 Jun 75.

DESCRIPTORS: *Wave propagation, *Mechanical waves, *Atmospheric physics, *Ocean waves, Ray tracing, Surface waves, Internal waves, Reprints (U)
IDENTIFIERS: *Dynamic oceanography, *Atmospheric waves, Caustic surfaces (U)

First a short wavelength asymptotic expansion, employing rays, is presented for waves propagating in a rotating compressible fluid layer of nonuniform depth. This theory applies to surface, internal and acoustic waves in an ocean or atmosphere. It yields infinite amplitudes at caustics and shorelines. Therefore two different asymptotic expansions, uniform in a region containing a caustic and a shoreline respectively, are constructed. The yield the correct finite amplitude at the caustic and at the shoreline. In addition, expansions uniform in a region containing a caustic and a shoreline, or two or more caustics and shorelines, are constructed. Both general time-dependent waves and time-harmonic waves are considered. Linear theory is employed. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A011 891 8/3
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

Measurement of Internal Waves of Tidal Frequency Near a Continental Boundary. (U)

DESCRIPTIVE NOTE: Technical rept., JUL 74 11P Barbee,W. ;Dworski,J. ; Irish,J. D. ;Larsen,L. ;Rattray,M. , Jr;
REPT. NO. TR-346, Contrib-811
CONTRACT: N00014-67-A-0103-0014, NSF-GA-30745X
PROJ: NR-083-012

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v80 n15 p1965-1974, 20 May 75.

DESCRIPTORS: *Internal waves, *Continental shelves, *Tidal currents, Shallow water, Oceanographic data, Energy transfer, Temperature measuring instruments, Profiles, Thermoclines, Reprints (U)

We have measured the internal wave field seaward of the continental shelf break off Vancouver Island, British Columbia, with an array of four moored temperature sensors and numerous STD casts. These measurements have been analyzed for their energy content at the semidiurnal tidal frequency, and the results compared with a theory of generation of internal tides at a shelf break. A peak in amplitude is observed at a depth slightly greater than that predicted by the theory. The observed phase change across this peak is consistent with seaward propagation of energy from the shelf break. (Author) (U)

AD-A011 888 8/3
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

Effects of Continental Slope and Variable Brunt-Vaisala Frequency on the Coastal Generation of Internal Waves. (U)

DESCRIPTIVE NOTE: Technical rept., FEB 74 14P Prinsenberg,S. J. ;Rattray, Maurice , Jr;
REPT. NO. TR-343, Contrib-814
CONTRACT: N00014-67-A-0103-0014, NSF-GA-30745X
PROJ: NR-083-012

UNCLASSIFIED REPORT
Availability: Pub. in Deep-Sea Research, v22 p251-263 1975.

DESCRIPTORS: *Internal waves, *Continental shelves, *Tidal currents, Depth finding, Ocean bottom, Energy transfer, Wave propagation, Time dependence, Oceanographic data, Reprints (U)
IDENTIFIERS: Brunt Vaisala frequency (U)

Internal waves of significant amplitudes can be generated when long surface waves pass over a depth profile approximating the continental shelf. In addition to the shelf-generated beam with a vertical depth twice the depth and its center along the characteristic emanating from the surface above the shelf, wave energy is generated from an inclined slope that interfaces with the oceanic beam constructively sloping below and destructively above the center of the downwards propagating beam. After reflection from the oceanic bottom the additional energy adds to the oceanic beam's energy above its center and substracts below its center. The magnitude of this effect increases as the inclination of the slope approaches that of the internal wave characteristics. For a Brunt-Vaisala frequency decreasing with depth, the vertical extent of the oceanic beam increases as it propagates downward from the generating region. The spreading of the adjacent characteristics with depth decreases the energy density; however, because of the simultaneous steepening of the characteristics, the vertical displacements are not so strongly affected. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A011 887 8/10 8/3
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

A Compilation of Articles Reporting Research Sponsored by the Office of Naval Research. (U)

JUN 75 70P
REPT. NO. TR-343, Ref-M75-66
CONTRACT: N00014-67-A-0103-0014
PROJ: NR-083-012

UNCLASSIFIED REPORT
Availability: Pub. in Various Jnls.
SUPPLEMENTARY NOTE: Includes Rept. nos. TR-344 thru TR-346. See also AD-A011 880.

DESCRIPTORS: *Oceanography, *Internal waves, Ocean waves, Oceanographic data, Continental slopes, Ocean tides, Ocean models, Plankton, Respiration, Sea water, Temperature, Metabolism, Marine geophysics, Reprints (U)
IDENTIFIERS: California current (U)

Contents: Effects of Continental Slope and Variable Brunt-Vaisala Frequency on the Coastal Generation of Internal Tides; The Effect of Temperature on Respiratory Electron Transport System in Marine Plankton; Microstructure and Intrusions in the California Current; and Measurement of Internal Waves of Tidal Frequency near a Continental Boundary. (U)

AD-A011 885 8/3
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

Tides at Cobb Seamount. (U)

DESCRIPTIVE NOTE: Technical rept.,
OCT 74 5P Larsen,Larry H. ;Irish, James D. ;
REPT. NO. TR-335, Contrib-818
CONTRACT: N00014-67-A-0103-0014, NSF-GA-30745X

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v80 n12 p1691-1695, 20 Apr 75.

DESCRIPTORS: *Seamounts, *Tides, Wave propagation, *Ocean waves, Recording systems, Oceanographic data, North Pacific ocean, Sampling, Time series analysis, Reprints (U)
IDENTIFIERS: Cobb seamount (U)

The diurnal and semidiurnal tidal constituents are calculated at Cobb seamount, latitude 46 46.4 N and longitude 130 48.8 W. The semidiurnal constituents agree with a model of Kelvin wave propagation north along the Pacific coast. The diurnal constituents do not agree with the Kelvin wave model. We also illustrate the application of an optimal interpolating formula to a time series consisting of the value and trend at each data point. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A011 883 8/1
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

Nutrient Transports through Lancaster Sound in Relation to the Arctic Oceans's Reactive Silicate Budget and the Outflow of Bering Strait Waters. (U)

DESCRIPTIVE NOTE: Technical rept.,
MAR 74 6P Codispoti,L. A. ;Owens,T. G. ;
REPT. NO. TR-333, Contrib-783
CONTRACT: N00014-67-A-0103-0014

UNCLASSIFIED REPORT
Availability: Pub. in Limnology and Oceanography, v20 n1 p115-119 Jan 75.

DESCRIPTORS: *Marine biology, *Ocean currents, Silicates, Transport, Bering Sea, Concentration(Composition), Nutrition, Reprints (U)

Data from the Lancaster Sound region help balance the Arctic Ocean's reactive silicate budget, but a net removal is still indicated. The reactive phosphorus and reactive silicate concentrations in Lancaster Sound suggest an enrichment with Bering Strait waters. (Author) (U)

AD-A011 881 8/10
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

Electronic Digitization and Sensor Response Effects on Salinity Computation from CTD Field Measurements. (U)

DESCRIPTIVE NOTE: Technical rept., JUN 74 5P Roden,Gunnar I. ;Irish, James D. ;
REPT. NO. TR-331, Contrib-788
CONTRACT: N00014-67-A-0103-0014
PROJ: NR-008-312

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Physical Oceanography, v5 n1 p195-199 Jan 75.

DESCRIPTORS: *Salinity, *Oceanographic data, Sampling, Depth finding, Thermoclines, Electrical conductivity, Profiles, North Pacific ocean, Reprints (U)

Spikes are often observed in salinity profiles computed from measurements of conductivity, temperature and pressure. Many of these spikes are not real and are the result of a mismatch in the response functions of the sensors. Some of the spikes are also due to the sequential sampling technique used by most digitizers whereby the sensors are not sampled at the same time or position. We derive expressions to linearly correct for these two causes of spikes. When the corrections are applied to measurements in the North Pacific, a significant reduction in the number and size of the spikes is observed in high gradient regions such as the thermocline. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A011 880 8/10 8/1 8/3
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

A Compilation of Articles Reporting Research Sponsored by the Office of Naval Research. (U)

MAY 75 51P
REPT. NO. TR-331, Ref-M75-56
CONTRACT: N00014-67-A-0103-0014, Nonr-477(37)
PROJ: NR-083-012

UNCLASSIFIED REPORT
Availability: Pub. in Various Jnls.
SUPPLEMENTARY NOTE: Includes Rept. nos. TR-332 three TR-336. See also AD-A011 887.

DESCRIPTORS: *Oceanography, Sea water, Salinity, Signal processing, Marine biology, Arctic Ocean, Silicates, Phosphorus, Circulation, Transport properties, Nitrogen, Ocean tides, Seamounts, Hydrostatic pressure, Plankton, Hydrostatic pressure, Plankton, Aquatic plants, Aquatic animals, Phosphorus compounds, Precipitation, Reprints (U)
IDENTIFIERS: Silicoflagellates, Ebridians, Phosphorite, Cobb seamount, Flagellates, Nutrients, Denitrification (U)

Electronic Digitalization and Sensor Response Effects on Salinity Computation from CTD Field Measurements; Silicoflagellates and Ebridians from Leg 31 of the Deep Sea Drilling Project; Nutrient Transport through Lancaster Sound in Relation to the Arctic Oceans's Reactive Silicate Budget and the Outflow of Bering Strait Waters; Marine Phosphorite Deposits and the Nitrogen Cycle; Tides at Cobb Seamount; and The Effect of Hydrostatic Pressure on Respiratory Electron Transport System Activity in Marine Zooplankton. (U)

AD-A011 817 8/3 4/2
ENVIRONMENTAL PREDICTION RESEARCH FACILITY (NAVY) MONTEREY CALIF

A Statistical and Spectral Analysis of the Air-Sea Interactions at OWS NOVEMBER. (U)

DESCRIPTIVE NOTE: Technical paper, MAY 75 90P Rabe,Kevin ;Bourke,Robert H. ;
REPT. NO. ENVPREDRSCHF-tech paper-9-75

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Air water interactions, *North Pacific Ocean, Surface temperature, Ocean surface, Atmospheric temperature, Wind velocity, Salinity, Heat transfer, Spectrum analysis, Barometric pressure, Cloud cover, Time series analysis, Regression analysis, Correlation techniques (U)
IDENTIFIERS: *November ocean station (U)

Oceanographic and meteorological data from Ocean Weather Station (OWS) NOVEMBER were analyzed by statistical and spectral methods in order to describe the nature and periodicities of the air-ocean energy exchange. Salinity data from 1968 through 1970 were compared with daily observed parameters commonly associated with changes in the salinity. Regression analysis showed surface salinity to be highly correlated with surface pressure which is interpreted as the surface salinity responding to a baroclinic transport. Twenty-four years (1947-1970) of daily averaged, observed climatological values, as well as heat exchange terms computed from them, were compared with the sea-surface temperature time series and spectrally analyzed. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A011 744 8/10 4/2
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

The Influence of Longitudinal Variations in Wind Stress Curl on the Steady Ocean Circulation, (U)

SEP 74 17P Kenyon,Kern E. ;
CONTRACT: N00014-75-C-0260
MONITOR: NSF/IDOE 75-404

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Physical Oceanography, v5 n2 p334-346 Apr 75.

DESCRIPTORS: *Wind, *Ocean waves, *Ocean currents, Ocean models, Oceans, Circulation, Interactions, Stresses, Variations, Reprints (U)
IDENTIFIERS: Wind stress curls (U)

The influence of longitudinal variations in wind stress curl on the steady circulation in a rectangular ocean basin is investigated analytically in a linear barotropic model. It is shown that longitudinal variations in the interior circulation are produced by longitudinal variations in the magnitude of a wind stress curl of constant (negative) sign. (Author) (U)

AD-A011 411 8/10 9/2
ENVIRONMENTAL PREDICTION RESEARCH FACILITY (NAVY) MONTEREY CALIF

Mediterranean Sea-Surface Temperature Analysis Program MEDSST. (U)

JAN 73 128P Larson,S. E. ;Anderson,A. E. , Jr.;I'Anson,L. ;
REPT. NO. EPRF-CP Note-5

UNCLASSIFIED REPORT

DESCRIPTORS: *Mediterranean Sea, *Ocean surface, *Computer programs, *Surface temperature, Data processing, Climate, Control sequences, Real time, FORTRAN (U)
IDENTIFIERS: MEDSST computer program, *Ocean temperature, CDC 3100 computers (U)

The MEDSST program performs a synoptic sea-surface temperature analysis for the Mediterranean and was developed specifically for operational use by the U.S. Navy Fleet Weather Central (FWC) in Rota, Spain. The sea-surface temperature (SST) observations (ship reports) are input to the BTREPORT program on punched cards and the processed information is put on a history tape. These processed BT reports, in conjunction with the previous SST analyzed field and SST climatology, are analyzed on a 25 x 53 polar stereographic grid projection. The resultant SST analysis field is grid-printed and also saved on a stacked analysis history tape for reference by the next day's analysis. The analyzed SST field on the history tape can also be contour-plotted on the Varian by using the two programs GVPLOT and PLOT31V. This document describes the MEDSST program and all related subroutines in detail. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A011 347 5/9 8/1 8/10 8/7
13/10
ROSENSTIEL SCHOOL OF MARINE AND ATMOSPHERIC SCIENCE MIAMI FLA

Annual Report, 1973-1974 of the University of Miami, Dorothy H. and Lewis Rosenstiel School of Marine and Atmospheric Science. (U)

74 77P

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanography, *Education, Marine engineering, Marine biology, Marine geology, Marine goephysics, Atmospheric physics, Climate, Oceanographic data, Reviews, Universities, Scientific research (U)

;Contents: Graduate studies; Division of Ocean engineering; Division of biology and living resources; Division of marine geology and geophysics; Division of chemical oceanography; Division of physical oceanography; Division of atmospheric science; Research cruises; Publications. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A011 159 8/7 4/2
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Late Quaternary Climatic Changes in the Norwegian and Greenland Seas. (U)

DESCRIPTIVE NOTE: Book article,
74 34P Kellogg,Thomas B. ;
REPT. NO. LDGO-2172
CONTRACT: N00014-67-A-0108-0004, NSF-GX-28671
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Climate of the Arctic, p3-36 1975.

DESCRIPTORS: *Norwegian Sea, *Marine climatology, Greenland, History, Core sampling, Deep oceans, Seasonal variations, Carbonates, Foraminifera, Temperature, Ocean currents, Sea ice, Glaciers, Reprints (U)
IDENTIFIERS: Paleoclimatology, Quaternary(Geology), Norwegian current (U)

Analyses of total carbonate and coarse fraction content in 29 deep-sea cores and faunal analyses of plank-tonic foraminifera in 7 cores provide climatic data for the past 150,000 years. These data show that temperatures have been much colder than at present for most of the past 150,000 years in the Norwegian and Greenland Seas. Only during the Eemian interglacial did temperatures moderate to about present levels. Quantitative paleo-temperature estimates, derived by applying the Imbrie and Kipp technique to seven cores, show that except for the Eemian and Recent interglacials, temperatures less than 0C in winter and 5C in summer prevailed throughout the region. This temperature regime is identical to that of the northwestern Greenland Sea today, where sea-ice is present during the winters. For about 100,000 of the past 127,000 years, therefore, ice has probably covered most or all of the Norwegian and Greenland Seas, at least during the winters. The Norwegian Current, a branch of the Gulf Stream, is responsible for the relatively warm climate of Scandinavia at the same latitude where Greenland supports an ice cap.

(U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A011 158 8/3
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Subsurface Eddies in the Arctic Ocean and Baroclinic Instability. (U)

DESCRIPTIVE NOTE: Book article,
75 9P Hunkins,Kenneth L. ;
REPT. NO. LDGO-2170
CONTRACT: N00014-67-A-0108-0016
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Climate of the Arctic, p398-406 1975.

DESCRIPTORS: *Ocean currents, *Eddy currents, Arctic ocean, Subsurface, Transients, Stratification, Instability, Sea water, Temperature, Salinity, Gradients, Density, Sea ice, Circulation, Rossby waves, Reprints (U)
IDENTIFIERS: *Baroclinic instability, AIDJEX project (U)

On four occasions in March and April of 1972 transient undercurrents associated with eddies were observed at depths between 50 and 300 m. The velocity profile was parabolic with a maximum of 40 cm/sec at 150m. A distortion of the salinity and temperature field accompanied these currents, and gradient equilibrium was closely approached in each case. Two of the eddies were anticyclonic and two cyclonic. The lifetime of the eddies is not known but they persisted for at least several days and probably endured much longer. The eddies were 10 to 20 km in diameter and separated by 20 to 50 km from each other although the time and space scales were not always clearly resolved. The subsurface currents in the eddies were swifter than the wind-driven currents in the upper mixed layer which usually had speeds of less than 10 cm/sec and there seemed to be little correlation between the two levels. The eddies are believed to have their origin in the instability of the basic baroclinic current. The large-scale geostrophic current was about 1 cm/sec in the upper few hundred meters of the observation area in the permament arctic anticyclonic gyre. The gyre has a lens-shaped surface water mass of low salinity produced in the Arctic, overlying high-salinity water originating in lower altitudes.

(U)

AD-A011 114 8/12 8/10
DEFENCE RESEARCH ESTABLISHMENT OTTAWA (ONTARIO)

Interpretation of SLAR Imagery of Ice in Nares Strait and the Arctic Ocean, (U)

JAN 75 42P Dunbar,Moira ;
REPT. NO. DREO-R-712

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Summary in French.

DESCRIPTORS: *Sea ice, *Arctic Ocean, Aerial reconnaissance, Radar images, Side looking radar, Thickness, Drift, Infrared photography, Canad (U)
IDENTIFIERS: *Nares Strait, *Ice observations, Remote sensing (U)

SLAR imagery of Nares Strait was obtained on four flights carried out in January, March and August 1973, and April 1974 by Canadian Forces Maritime Proving and Evaluation Unit in an Argus aircraft equipped with a Motorola APS-94D SLAR. The March flight also covered two lines in the Arctic Ocean, from Alert to the pole and from the pole down the 4 degrees E meridian to the ice edge at about 80 degrees N. No observations on the ground were possible, but some back-up was available on all flights from visual observations recorded in the air, and on the March flight from infrared line-scan and vertical photography. The interpretation of ice features from the SLAR imagery is discussed, and the conclusion reached that in spite of certain ambiguities the technique has great potential which will increase with improving resolution. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A011 094 8/3 4/2
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

A Compilation of Moored Current Meter and Wind Observations. Volume III. 1970 Array Experiment. (U)

DESCRIPTIVE NOTE: Technical rept.,
FEB 75 102P Pollard,R. T. ;Tarbell,S.
;
REPT. NO. WHOI-75-7
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 7 dated Jul 74, AD/A-001 715.

DESCRIPTORS: *Ocean currents, *Sea breeze, *Mooring, *North Atlantic Ocean, Wind velocity, Buoys, Power spectra, Anemometers, Flowmeters, Statistical data, Diagrams, Seasonal variations, Recovery, Sampling (U)

Summaries of wind and current measurements made with current meters and wind recorders at site D in the North Atlantic Ocean by the Woods Hole Oceanographic Institution during June, July and August of 1970 are presented. Averaged quantities are presented in computer-generated output as basic statistics, spectra, demodulation plots, progressive vector diagrams, and east-north component plots. (U)

AD-A010 900 8/2
LOUISIANA STATE UNIV BATON ROUGE COASTAL STUDIES INST

Trajectories and Speeds of Wind-Driven Currents near the Coast. (U)

DESCRIPTIVE NOTE: Technical rept.,
JUN 74 17P Murray,Stephen P. ;
REPT. NO. TR-190
CONTRACT: N00014-69-A-0211-0003
PROJ: NR-388-002

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Oceanography, v5 n2 p347-360 Apr 75.

DESCRIPTORS: *Ocean currents, *Eddy currents, Coastal regions, Wind, Velocity, Trajectories, Stratification, Reprints (U)

Detailed observation of drogue movements within 800 m of a straight shoreline indicates the primary current generated by local winds to be directed within a few degrees of parallel to the shore nearly independently of wind direction. Subtle vertical structure in the onshore-offshore speed component is dependent on vertical stratification such that unstratified water produces a two-layered flow (onshore in the surface layer, offshore in the bottom layer), and moderately stratified water produces a three-layered flow (onshore in surface and bottom layers, offshore at intermediate depths). Theoretical conclusions from Jeffreys' constant eddy viscosity theory support the unstratified velocity profile and accurately predict the alongshore current speeds. Numerical solutions with a depth-dependent eddy viscosity indicate that the three-layered flow pattern is a direct result of the density gradient. Even in these shallow waters the inclusion of coriolos effects in the theory is necessary for a complete understanding of the current observations. Simple theoretical calculations on the response characterisitcs of various sized surface-tracked drogues as a function of wind speed indicate that drogue size should be carefully selected in terms of expected magnitudes of wind and current speeds. (Author) (U)

AD-A010 696 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Sediments and Structure of the Japan Sea. (U)

DESCRIPTIVE NOTE: Journal article,
JAN 74 16P Ludwig,William J. ;Murauchi, Sadanori ;Houtz,Robert E. ;
REPT. NO. LDGO-2186
CONTRACT: N00014-67-A-0108-0004
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Geological Society of America Bulletin, v86 p651-664 May 75.

DESCRIPTORS: *Marine geology, *Sediments, *Structural geology, *Japan Sea, Sonobuoys, Seismic reflection, Basins(Geographic), Reprints (U)
IDENTIFIERS: Marginal ocean basing (U)

It is likely that the Japan Sea existed essentially in its present form prior to the beginning of the movements (in late Oligocene or early Miocene) that resulted in the present arcuate structure of Japan. Evidence of seismic velocity and layer thickness, rough local relief, large amplitude magnetic anomalies compared to the basins, low value of free-air gravity anomalies, dredged volcanics from the crestal surfaces, and granitic rock from the flanks, all indicate that Yamato Ridge is primarily a large welt of volcanic material intruded by granite on a thick layer of material with oceanic-type velocity. This can be interpreted to mean that Yamato Ridge is an integral part of the island-arc system of Japan, rather than a fragment of Siberia that has broken away and drifted out to its present location. The dredged basalt and andesite samples of Pliocene-early Miocene age from Yamato Ridge reflect the period of Neogene volcanism on the Japanese mainland. Late Paleozic-early Mesozoic plutonic intrusives of Japan are thought to be related to the regional metamorphism and tectonic movements that occurred during that time. It is reasonable to suppose, therefore, that the granites of Yamato Ridge may be related to the Hida metamorphism of late Paleozoic age, because the K-Ar age (197 to 220 m.y.) (U)

AD-A010 583 8/10 8/1
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Physical, Chemical and Biological Data, Climax II Expedition, 27 August - 13 October 1969. (U)

DESCRIPTIVE NOTE: Data rept.
MAY 75 109P
REPT. NO. SIO-Ref-75-6
CONTRACT: N00014-75-C-0153

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Sponsored in part by National Science Foundation, Washington, D.C.

DESCRIPTORS: *Oceanographic data, *Marine biology, *North Pacific Ocean, Sea water, Temperature, Salinity, Plankton, Chlorophylls, Oxygen, Inorganic compounds, Phosphates, Nitrates, Sampling, Oceanographic ships, Tables(Data) (U)
IDENTIFIERS: Primary biological productivity, Biomass, Climax 2 vessel (U)

The expedition was the second of a series to the North Pacific Central Gyre. The purpose of this research was to acquire information on the community structure and function in an area thought to be relatively homogeneous with respect to the distributions of physical, chemical and biological variables. By examination of early data and because of biogeographic evidence, the area 28 degrees N 155 degrees W was selected as 'representative' of a much larger area within the Gyre. (U)

AD-A010 541 4/2 8/3
EARTH SATELLITE CORP WASHINGTON D C

Sea-Surface Wind Speed Estimates from the Nimbus 5 ESMR. (U)

DESCRIPTIVE NOTE: Final rept. May 74-Feb 75,
FEB 75 61P Sabatini,Romeo R. ;
CONTRACT: N66856-4120-5501
PROJ: WF52-551
TASK: WF52-551-713
MONITOR: EPRF TR-3-75(ESC)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated May 74, AD-783 547.

DESCRIPTORS: *Sea states, *Ocean surface, *Wind velocity, *Mediterranean Sea, *North Pacific Ocean, Radiometers, Water vapor, Microwaves, Air water interactions, Brightness, Statistical analysis, Meteorological satellites, Surface temperature (U)
IDENTIFIERS: Nimbus 5 satellite, Tehuantepec Gulf, Spaceborne photography (U)

A statistical relationship is derived between sea surface winds and the brightness temperatures, T sub B, measured by the Nimbus 5 Electrically Scanning Microwave Radiometer (ESMR) in cloudless areas. The relationship is derived by using wind observations in the Mistral and the Tehuantepecer, two fall wind situations occurring in very different sea surface temperature and atmospheric water vapor environments. The Mistral, off the coast of southern France, is characterized by relatively cold sea-surface temperatures of 12 to 15C and dry atmospheres with about 1 cm. of precipitable water. The Tehuantepecer, off the Pacific coast of southern Mexico is characterized by warm sea surface temperatures of 22 to 28C, and moist atmospheres with about 3 cm. of precipitable water. The data thus provided a wide range of sea surface temperatures and atmospheric water content for deriving an equation relating wind and T sub B. The derived equation expresses the surface winds in terms of T sub B, sea surface temperature, and atmospheric water content, and fits the data with a probable error of 5.1 knots. (U)

AD-A010 537 13/2 14/2
DEPARTMENT OF THE NAVY WASHINGTON D C

Environmental Impact Statement. Volume III. Naval Oceanographic Center, Bay St. Louis, Mississippi. Public Hearing and Comments Concerning Draft of Department of the Navy Environmental Impact Statement on Proposed Relocation of Naval Oceanographic Center to Bay St. Louis, Mississippi. (U)

DESCRIPTIVE NOTE: Final rept.
JUN 75 397P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-A010 536.

DESCRIPTORS: *Research facilities, *Oceanography, *Naval research, Environmental protection, Public relations, Documents, Mississippi (U)
IDENTIFIERS: Naval Oceanographic Center, Bay Saint Louis(Mississippi), *Environmental impact statements, Public hearings (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A010 536 13/2 14/2
DEPARTMENT OF THE NAVY WASHINGTON D C

Environmental Impact Statement. Volume II. Naval Oceanographic Center, Bay St. Louis, Mississippi. (U)

DESCRIPTIVE NOTE: Final rept.
JUN 75 169P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-A010 535 and Volume 3, AD-A010 537.

DESCRIPTORS: *Research facilities, *Oceanography, *Naval research, Environmental protection, Research management, Personnel management, Relocation, Planning, Mississippi (U)
IDENTIFIERS: Naval Oceanographic Center, Bay Saint Louis(Mississippi), *Environmental impact statements (U)

;Contents: Decentralization of DOD activities from NCR; Naval Oceanographic Office space requirements; Components and mission statements of agencies in residence in NSTL; Personnel plan; Mississippi Gulf Coast Region resources; Employment goals for Picayune/Pearl River County -- Mississippi; Demographic data. (U)

AD-A010 535 13/2 14/2
DEPARTMENT OF THE NAVY WASHINGTON D C

Environmental Impact Statement. Volume I. Naval Oceanographic Center, Bay St. Louis, Mississippi. (U)

DESCRIPTIVE NOTE: Final rept.
JUN 75 120P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-A010 536.

DESCRIPTORS: *Research facilities, *Oceanography, *Naval research, Environmental protection, Buildings, Site selection, Relocation, Employment, Housing(Dwellings), Traffic, Mississippi (U)
IDENTIFIERS: Naval Oceanographic Center, Bay Saint Louis(Mississippi), *Environmental impact statements (U)

The proposed action would establish a Naval Oceanographic Center at the National Space Technology Laboratory (NSTL), Bay St. Louis, Mississippi. A number of sites were visited and considered for the proposed action and analyses were made for the more competitive ones. No significant impact on the natural environment will result directly from the proposed action since existing facilities will fulfill most needs. Relocation of the attected activities could result in severance of certain family, cultural and community ties for many of the employees. Urbanization of the Countryside adjacent to several of the local communities will be speeded with the influx of new families and the attendant increase in demand for housing, municiple services and recreational facilities. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A010 249 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Volume and Heat Transports Between the Red Sea and Gulf of Aden, and Notes on the Red Sea Heat Budget, (U)

74 13P Patzert,William C. ;
CONTRACT: N00014-75-C-0152

UNCLASSIFIED REPORT
Availability: Pub. in Symposium de l'Association International des Sciences Physiques de l'Ocean (I.A.P.S.P.), (CNEXO), p191-201 1974.

DESCRIPTORS: *Marine geophysics, *Red Sea, Hydrology, Heat balance, Sea water, Transport, Seasonal variations, Reprints (U)
IDENTIFIERS: Aden Gulf (U)

Estimates of the monthly mean transports of volume and heat exchanged over the shallow sill separating the Red Sea and Gulf of Aden below 100 m depth are calculated. (Author) (U)

AD-A010 243 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Seasonal Reversal in Red Sea Circulation, (U)

74 37P Patzert,William C. ;
CONTRACT: N00014-75-C-0152

UNCLASSIFIED REPORT
Availability: Pub. in Symposium de l'Association Internationale des Sciences Physiques de·l'Ocean (I.A.P.S.O.), (CNEXO), p55-89 1974.
SUPPLEMENTARY NOTE: Abstract in French.

DESCRIPTORS: *Ocean currents, *Red Sea, Hydrology, Seasonal variations, Water flow, Monsoons, Reprints (U)
IDENTIFIERS: Aden Gulf (U)

The monsoon reversal in the Red Sea circulation is analyzed by presenting a monthly mean description of variations that occur in the oceanic structure and circulation in the upper 250 m of the Sea and how they are related to the winds acting at the sea surface. During winter (October to May), the surface waters flow north, sink in the northern Red Sea, and return to the south as a warm, high-salinity subsurface current that flows out over the shallow sill into the Gulf of Aden. During summer (June to September), the winter cellular flow pattern reverses: i.e., the surface waters of Sea flow south, causing an upwelling of the structure in the northern Red Sea, while in the southern Red Sea a subsurface inflow over the shallow sill of cool, low-salinity Gulf of Aden water occurs. This reversal in circulation is closely associated with reversals in the monsoon winds acting at the sea surface in the southern Red Sea and Gulf of Aden. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A010 154 8/10
TEXAS A AND M UNIV COLLEGE STATION DEPT OF OCEANOGRAPHY

Gulf Stream Hydrographic Sections at the New England Seamount Chain. (U)

DESCRIPTIVE NOTE: Technical rept., DEC 74 86P Schmitz,Joyce ;Whitworth, Thomas , III;Vastano,Andrew C. ;Warren,Bruce A. ;
REPT. NO. TR-74-5-T
CONTRACT: N00014-68-A-0308-0002

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with Woods Hole Oceanographic Institution, Mass., Contract N00014-66-C-0241.

DESCRIPTORS: *Gulf Stream, *Oceanographic data, Temperature, Salinity, Density, Sea water, Ocean bottom topography, Oceanographic ships, North Atlantic Ocean (U)
IDENTIFIERS: Knorr Vessel (U)

The report presents vertical sections of temperature (C), salinity (parts per thousand by weight) and specific volume anomaly (0.00001 ml/g) for selected stations from R/V KNORR Cruise 22. Individual station data is given separately in a companion report 'An Investigation of the Interaction Between the Gulf Stream and the New England Seamount Chain'. Also shown are horizontal plots of dynamic topography from the sea surface to 4000 db at 200-db intervals. (U)

AD-A010 151 8/10 17/1 20/1
TEXAS A AND M UNIV COLLEGE STATION DEPT OF OCEANOGRAPHY

Acoustic Effects of Fronts in the Western North Atlantic Ocean. (U)

DESCRIPTIVE NOTE: Technical rept., APR 75 14P Schmitz,Joyce ;Vastano, Andrew C. ;
REPT. NO. TR-75-1-T
CONTRACT: N00014-68-A-0308-0002

UNCLASSIFIED REPORT

DESCRIPTORS: *North Atlantic Ocean, *Oceanographic data, *Underwater sound, Temperature, Acoustic velocity, Salinity, Pressure, Depth, Anomalies, Sea water (U)
IDENTIFIERS: *Oceanic fronts (U)

The report describes the hydrographic section chosen to study acoustic effects of fronts in the Western North Atlantic Ocean and the preparation of a data deck for the Acoustic Environmental Support Detachment program. A series of computer runs made at Naval Research Laboratories with varied source location and depth, receiver depth and presence of large scale anomalies in the hydrographic section form the basis of the parametric study. (U)

AD-A010 135 8/10 8/3 8/7
OFFICE OF NAVAL RESEARCH ARLINGTON VA

Report Availability Notice, Spring 1975, (U)

75 339P Kielhorn,William V. ;
REPT. NO. ONR-ACR-207

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated 1974, AD-785 905.

DESCRIPTORS: *Oceanographic data, *Abstracts, Marine biology, Ocean bottom topography, Marine geophysics, Marine geology, Air water interactions, Marine meteorology, Summer, Naval research (U)

This is one of a series of reports consisting of abstracts of recent technical reports in various areas of oceanography, generated by contractors sponsored by the Ocean Science and Technology Division (Code 480) of the Office of Naval Research. (U)

AD-A010 072 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Meridional Profiles of Ship Drift Components, (U)

NOV 74 6P Stidd,Charles K. ;
CONTRACT: N00014-75-C-0260

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v80 n12 p1679-1682, 20 Apr 75.

DESCRIPTORS: *Ocean currents, North Pacific Ocean, Drift, Direction finding, Pacific Ocean, Equatorial regions, Latitude, Upwelling, Longitude, Seasonal variations, Directional, Velocity, Oceanographic data, Statistical analysis, Reprints (U)
IDENTIFIERS: Downwelling, Equatorial countercurrent (U)

Nearly 4 million ship drift reports from 1900 through 1972 have been summarized in squares of 5 deg latitude x 10 deg longitude for the oceans of the world and separately in 5 x 5 deg squares for the North Pacific. The averages for the squares have themselves been averaged to provide mean latitudinal values of the components and their standard deviations. This has been done for each of the four seasons and for the year. The resulting profiles of these values reveal such features as the equatorial countercurrent and show how it changes with season. Profiles of the first differences of the v component reveal the latitudes of upwelling and downwelling. (Author) (U)

AD-A010 034 8/3
TEXAS A AND M UNIV COLLEGE STATION DEPT OF OCEANOGRAPHY

A Note on Observations of Long-Term Trajectories of the North Pacific Current, (U)

AUG 74 4P Kirwan,A. D. , Jr.;
McNally,G. ;
REPT. NO. Contrib-591
CONTRACT: N00014-68-A-0308-0002

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Physical Oceanography, v5 n1 p188-191 Jan 75.

DESCRIPTORS: *Ocean currents, North Pacific Ocean, Trajectories, Drift, Tracking, Variations, Separation, Velocity, Wind, Reprints (U)

Two long-term drifters were tracked for several months in the North Pacific as part of the NORPAX Pole experiment. The trajectories indicate at least one core of the North Pacific current was centered around 37 deg N. Velocities of the drifters indicate that the current is highly variable with eastward components ranging from 0 to over 20 cm/s. After the first two weeks there was virtually no north-south movement. An analysis of the drifter separation shows that for two weeks the drifters moved together. Thereafter, the separation rate was approximately exponential. The separation was due to the eastward movement of one drifter with respect to the other. (Author) (U)

AD-A009 937 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Surface Water Temperatures at Shore Stations. United States West Coast 1973. (U)

DESCRIPTIVE NOTE: Data rept.
APR 75 24P
REPT. NO. SIO-Ref-75-8
CONTRACT: N00014-69-A-0200-6049, NSF-GD-32879

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated 25 May 73, AD-766 375.

DESCRIPTORS: *North Pacific Ocean, *Surface temperature, *Salinity, *Ocean surface, Coastal regions, California, Oregon, Washington(State), Tables(Data) (U)

This report presents sea surface temperature and salinity data observed during 1973 along the west coast of North America from the straight of Juan de Fuca, Washington to La Jolla, California. The data consist of monthly means, ranges and standard deviations based on daily observations. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A009 834 8/10
RHODE ISLAND UNIV KINGSTON GRADUATE SCHOOL OF OCEANOGRAPHY

Oxygen as a Quasi-Conservative Constituent in Deep Waters of the Eastern Caribbean. (U)

DESCRIPTIVE NOTE: Technical rept.,
MAY 75 22P Lorens,Robert B. ;Kester, Dana R. ;
REPT. NO. Ref-75-3
CONTRACT: N00014-68-A-0215-0003
PROJ: NR-083-165

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Oxygen, *Caribbean Sea, Mathematical models, Diffusion, Advection, Temperature, Salinity, Deep water (U)

A simple vertical advection-eddy diffusion model was applied to continuous vertical temperature, salinity, and dissolved oxygen profiles at depths greater than 1000 m in the eastern Caribbean. The continuous profiles were well-suited to vertical modeling because they tightly constrained the selection of the model boundaries and the model parameters. A model in which oxygen was assumed to be a conservative constituent fit the observations to within about 0.06 ml/l. The vertical advection-eddy diffusion parameter was the same at three locations in the Grenada Basin, but it was 50% smaller at the northeast corner of the Venezuela Basin. This analysis provides values for the upward vertical velocity for the vertical eddy diffusion coefficients, and a rate of oxygen consumption. A time of 350 years was calculated for the advection of waters between 2000 m and 1000 m in the eastern Caribbean. (U)

AD-A009 798 9/2 8/10
NAVAL RESEARCH LAB WASHINGTON D C

A Program for Storing Oceanographic Data on Magnetic Tape. (U)

DESCRIPTIVE NOTE: Final rept.,
MAR 75 50P Blodgett,Marilyn L. ;
Massingill,James V. ;
REPT. NO. NRL-7861
CONTRACT: ARPA Order-1787
PROJ: NRL-S01-47, ZF52-552
TASK: ZF52-552-01

UNCLASSIFIED REPORT

DESCRIPTORS: *Computer programs, *Oceanographic data, *Geophysics, Navigation, Bathymetry, Geomagnetism, Control sequences, FORTRAN (U)
IDENTIFIERS: CDC 3800 computers, FORTRAN 4 programming language, GEODATA computer program (U)

A program has been written for the storage of navigation, bathymetry, and magnetics data on magnetic tape in BCD form. This eliminates the problem of sotring vast amounts of data collected on computer cards by oceanographic and geophysical cruises. This program uses a slightly modified format recommended by the National Research Council of the National Academy of Sciences. The program was written in FORTRAN 4 for use on the CDC 3800; however the program can be converted to run on other systems with littly difficulty. (U)

AD-A009 796 9/2 8/10
NAVAL RESEARCH LAB WASHINGTON D C

A Program for Copying a Geodata Data Tape. (U)

DESCRIPTIVE NOTE: Final rept.,
MAR 75 27P Blodgett,Marilyn L. ;
Massingill,James V. ;
REPT. NO. NRL-7862
CONTRACT: ARPA Order-1787
PROJ: NRL-S01-47, ZF52-552
TASK: ZF52-552-01

UNCLASSIFIED REPORT

DESCRIPTORS: *Computer programs, *Oceanographic data, *Geophysics, Navigation, Bathymetry, Geomagnetism, Control sequences, FORTRAN (U)
IDENTIFIERS: GEODATA computer program, CDC 3800 computers, FORTRAN 4 programming language, GEOREAD computer program (U)

A program has been written for reading a GEODATA tape and copying all or portions of the navigational, bathymetric, and magnetics data by listing, by punching cards, and/or by writing a new tape. The program can eliminate data not taken on certain dates or data which do not fall in a certain area of latitude and longitude. The program thus enables the scientist to exchange data in any convenient form while eliminating any classified information. The program was written in FORTRAN 4 for use on the CDC 3800; however the program can be converted to run on other systems with little difficulty. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A009 608 8/3 8/7 8/10
OREGON STATE UNIV CORVALLIS SCHOOL OF OCEANOGRAPHY

Compilation of Reprints, (U)

MAR 75 108P Brunson,Burlie A. ;Elliott, William P. ;Plank,William S. ;Zaneveld,Ronald V. ;Pak,Hasong ;
REPT. NO. Ref-74-19, Ref-74-21
CONTRACT: N00014-67-A-0369-0007
PROJ: NR-083-102

UNCLASSIFIED REPORT
Availability: Pub. in Various Jnls. 1974.
SUPPLEMENTARY NOTE: Includes Rept. nos. Ref-74-22, Ref-74-23, Ref-74-24, Ref-74-25 and Ref-74-26.

DESCRIPTORS: *Oceanography, Scientific research, Oceanographic data, Marine geophysics, Marine meteorology, Reports, Universities, Oregon, Reprints (U)

Contents: Steric Contribution to the Seasonal Oscillation of Sea Level off Oregon; Temporal Variability of Suspended Matter in Astoria Canyon; Equatorial Front in the Eastern Pacific Ocean; Probability Distributions of Breaking Wave Heights; Monitoring and Predicting El Nino Invasions; Invariance of Apparent Equilibrium Constants; and The Carbon Dioxide System of the Bering Sea. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A009 604 8/3
OREGON STATE UNIV CORVALLIS SCHOOL OF OCEANOGRAPHY

Probability Distributions of Breaking Wave Heights, (U)

74 19P Nath,John H. ;Ramsey,Fred L. ;
REPT. NO. Ref-74-23
CONTRACT: N00014-67-A-0369-0007
PROJ: NR-083-102

UNCLASSIFIED REPORT
Availability: Pub. in Proceedings of the International Symposium on Ocean Wave Measurement and Analysis, New Orleans, La. 9-11 Sep 74, p379-395.

DESCRIPTORS: *Ocean waves, *Deep oceans, Probability distribution functions, Wind velocity, Hydrodynamics, Storms, Reprints (U)
IDENTIFIERS: Breaking waves (U)

The probability distributions of breaking wave heights in the deep ocean can be determined, at least approximately, from a long history of surface meteorological data that describe wind speed and fetch. The usual assumption that zero-upcrossing wave heights and periods are independent random variables leads to higher percentages of a given wave steepness that is actually the case. The joint distribution of wind speed and fetch was determined for Station PAPA and both variables proved to be independent of storm duration. Thus, the six-hour unit storms were considered to be independent, which considerably simplified the computations. (Author) (U)

AD-A009 526 8/10 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

NORPAX Highlights. Volume 3, Number 3, April 1975. Large-Scale Thermal Structure during POLE. Pacific Sea Level Stations, (U)

APR 75 19P Barnett,T. P. ;Rearwin,S. D. ;Wyrtki,Klaus ;
CONTRACT: N00014-69-A-0200-6043

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated Feb 73, AD-755 755.

DESCRIPTORS: *Ocean tides, *Bathythermograph data, *Pacific Ocean, Temperature, Bathythermographs, Heat, Flowmeters, North Pacific Ocean, Ocean currents, Sea level (U)

;Contents: Large-scale thermal structure during POLE; Pacific Sea level stations. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A006 029 8/3 8/10 4/2
OFFICE OF NAVAL RESEARCH LONDON (ENGLAND)

European Symposium on Ocean Data Acquisition Systems, Held at University of Southampton on 16-18 September 1974. (U)

DESCRIPTIVE NOTE: Conference rept.,
DEC 74 27P Spiess,F. N. ;
REPT. NO. ONRL-C-8-74

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Marine meteorology, *Meetings, Data acquisition, Buoys, Meteorological instruments, Ocean waves, Flowmeters, Abstracts, Great Britain (U)

The European Ocean Data Acquisition Systems Symposium involved primarily northern European participants and focused its attention on systems involving buoys. Papers and discussion covered a variety of buoy types, small and large, as well as instrumentation, data transmission (heavy emphasis on satellite relay) and operational aspects. Geographically the North Sea was the center of attention, although work in other areas (all within a thousand mile radius of Southampton) was presented. (U)

AD-A005 828 8/3 4/2
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF ADVANCED OCEAN ENGINEERING LAB

Marine Physics: Internal-Surface Wave Interaction and Microstructure Measurement Program. (U)

DESCRIPTIVE NOTE: Technical progress rept. 1 Jul-31 Dec 74,
DEC 74 49P Cox,Charles S. ;Lang, Robherd E. ;Gregg,Michael C. ;Cairns,James L. ;Williams,Gordon O. ;
REPT. NO. AOEL-68, SIO-Ref-75-3
CONTRACT: N00014-69-A-0200-6039, ARPA Order-2185
PROJ: NR-260-105

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean waves, *Internal waves, *Air water interactions, Temperature, Salinity, Boundary layer, Density, Water vapor, Microstructure, Surface waves (U)
IDENTIFIERS: Atmospheric boundary layer (U)

The semi-annual report reflects the technical status of internal/surface wave interaction and microstructure projects conducted within the Advanced Ocean Engineering Laboratory at the Scripps Institution of Oceanography. These projects are: (1) Thermal Microstructure - to examine in detail the structure and dynamics of temperature and salinity and (2) Atmospheric Boundary Layer - to provide an understanding of the interaction between atmospheric boundary effects and surface waves. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A005 542 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Late Jurassic Sea-Floor Spreading in the Eastern Indian Ocean. (U)

DESCRIPTIVE NOTE: Journal article,
OCT 74 4P Larson,Roger L. ;
REPT. NO. LDGO-2150
CONTRACT: N00014-67-A-0108-0004, NSF-GA-27281
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Geology, p69-71 Feb 75.

DESCRIPTORS: *Ocean bottom, *Indian Ocean, Marine geophysics, Magnetic anomalies, Reversible, Linearity, Australia, Deep ocean, Drilling, Abyssal zones, Reprints (U)
IDENTIFIERS: *Sea floor spreading, Jurassic period, Deep sea drilling project, Continental drift (U)

Magnetic anomaly lineations that lie just north of northwestern Australia in the eastern Indian Ocean are correlated with the Late Jurassic magnetic reversal sequence. Magnetic lineations M-22 to M-25 trend east-northeast with the oldest anomaly against the stable Australian margin. This correlation agrees with the age of the Oxfordian basement recovered from Deep Sea Drilling Project Site 261 in the area and with the geology of the Australian margin. It suggests that a landmass was rifted away from northwestern Australia about 155 m.y. ago. (Author) (U)

AD-A005 541 20/1
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Echo Character of the Western Equatorial Atlantic Floor and Its Relationship to the Dispersal and Distribution of Terrigenous sediments. (U)

DESCRIPTIVE NOTE: Journal article,
MAR 74 28P Damuth,John E. ;
REPT. NO. LDGO-2155
CONTRACT: N00014-67-A-0108-0004, NSF-GA-35454
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Marine Geology, 18 p17-45 1975.

DESCRIPTORS: *Echo ranging, *Ocean bottom, *Atlantic ocean, *Sediments, Continental slopes, Underwater sound, Classification, Equatorial regions, Very low frequency, Rivers, Reprints (U)
IDENTIFIERS: Terrigenous sediments, Amazon river (U)

The floor of the western equatorial Atlantic Ocean can be divided into several distinct provinces based on detailed characteristics of the bottom echos recorded with short-ping (<5 msec.) 3.5 and 12 kHz sound sources. Two major types of echos are recorded: (1) distinct echos; and (2) indistinct echos. Indistinct echos can be further sub-divided into (A) continuous prolonged echos; and (B) nyperbolic echos. Each class of echos contains two or more unique echo types. The regional distributions of the various echo types recorded from the continental rise, Amazon Cone, and abyssal plains reveal much information about sedimentary processes. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A005 539 8/3
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Subsurface Eddies in the Arctic Ocean. (U)

DESCRIPTIVE NOTE: Journal article,
NOV 73 18P Hunkins,Kenneth L. ;
REPT. NO. LDGO-2144
CONTRACT: N00014-67-A-0108-0016
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Deep-Sea Research, v21 p1017-1033 1974.

DESCRIPTORS: *Eddy currents, *Ocean currents, *Arctic Ocean, Shallow depth, Deep depth, Velocity, Mixing, Kinetic energy, Reprints (U)
IDENTIFIERS: Mixed layers(Marine), Subsurface currents (U)

In March and April of 1972, four transient undercurrents were associated with eddies at depths between 50 and 300 m in the Arctic Ocean. The velocity profile was parabolic with a maximum of 40 cm s-1 at 150 m. Two of the eddies were anticyclonic and two, cyclonic. The eddies persisted at least several days, they were 10-20 km in diameter, and were separated by 20-50 km. The subsurface currents in the eddies were swifter than those in the upper mixed layer, with little correlation between the two levels. The eddies are believed to have their origin in the instability of the basic baroclinic current. (U)

AD-A005 537 8/3
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

Baroclinic Eddies in the Arctic Ocean. (U)

DESCRIPTIVE NOTE: Technical rept.,
SEP 73 15P Newton,J. L. ;Aagaard,K. ;
Coachman,L. K. ;
REPT. NO. TR-8, Contrib-780
CONTRACT: N00014-67-A-0103-0021
PROJ: NR-307-326

UNCLASSIFIED REPORT
Availability: Pub. in Deep-Sea Research, v21
p707-719 1974.

DESCRIPTORS: *Ocean currents, Eddy currents,
Arctic Ocean, High velocity, Gradients,
Density, Stratification, Vortices, Sea water,
Temperature, Salinity, Reprints (U)
IDENTIFIERS: Pycnoclines, *Baroclinicity, Aidjex
project (U)

High-speed currents within the Arctic Ocean pycnocline are associated with small baroclinic eddies, most of which appear to be anticyclonic. A typical eddy has a central core with a radius of about 6km, which is in solid-body rotation. This core is surrounded by a region of large vorticity gradient. At radii greater than about 8 km the motion is nearly irrotational, although the eddy noticeably influences the velocity field out to about 15 km from the center. Such eddies are apparent in 1/3-1/2 of the available current records and hence represent a fairly common feature. T-S correlations in the eddies differ from those in the ambient waters, implying that the eddies are not locally generated. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A005 490 8/3 8/10
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

The Canada Basin: Mean Circulation and
Intermediate Scale Flow Features. (U)

DESCRIPTIVE NOTE: Technical rept.,
SEP 73 175P Newton,John L. ;
REPT. NO. TR-7
CONTRACT: N00014-67-A-0103-0021
PROJ: NR-307-326

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Arctic Ocean,
Circulation, Flow fields, Wind, Sea ice, Ocean
bottom topography, Bathymetry, Density,
Measurement, Eddy currents, Ocean surface,
Drift, Motion, Chukchi Sea, Stratification (U)
IDENTIFIERS: *Canada Basin, Arctic Ice
Dynamics Joint Experiment, Chukchi Rise (U)

Recent direct current measurements and hydrographic data from the Canada Basin of the Arctic Ocean are examined. From these data, the mean circulation pattern is defined and some of the time dependent components of the flow field are isolated and discussed. The major feature of the mean surface flow in the Canada Basin is an anticyclonic gyre, the Beaufort gyre. This circulation is maintained by the wind stress pattern as modified by the ice cover and, in the shallower areas near the coasts and around the Chukchi Province, is strongly affected by the bottom topography. The mean flow of the Atlantic layer (centered at 500 m) is also anticyclonic within the deep basin; however, there is evidence for a subsurface countercurrent along the Chukchi Rise. This southeast counterflow apparently results from Atlantic water entering the Canada Basin directly across the deeper southern portions of the Chukchi Province. The time-dependent components of the flow field are identified from the simultaneous hydrographic and current data collected from the Arctic Ice Dynamics Joint Experiment (AIRJEX) studies. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A005 380 8/3 8/10
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

Physical Oceanography of Arctic and Subarctic Seas. (U)

DESCRIPTIVE NOTE: Technical rept., DEC 74 75P Coachman,L. K. ;Aagaard,K. ;
REPT. NO. TR-10
CONTRACT: N00014-67-A-0103-0021
PROJ: NR 307-326

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Ocean currents, *Greenland Sea, *Arctic Ocean, Temperature, Salinity, Circulation, Heat transfer, Surface waters, Sea ice, Ocean surface, Subarctic regions (U)
IDENTIFIERS: Heat budget (U)

The Arctic Ocean is a Mediterranean sea of the Atlantic Ocean which is strongly affected by the unique feature of an ice cover. The ice influences the temperature and salinity structure as well as the transfer of momentum and heat at the ocean surface. Deep water exchange is possible with the Atlantic through the Greenland Sea, but in the shallow layers water additions from Arctic rivers and exchanges with the Norwegian Sea and via the Bering Strait and Canadian Archipelago are also important. Three water masses are identified: (1) Fresh cold Arctic Surface Water (0-200m); (2) warm salty Atlantic Water (200-900m), and (3) cold salty Bottom Water (> 900 m). The circulation as inferred from property distributions and direct current measurements is presented. The water masses and circulation pattern in the adjacent Greenland Sea are described. Budgets of water (mass) and heat for the Arctic Ocean calculated from the best estimates of the exchanges at the boundaries of the ocean are elucidated. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A005 379 8/3 8/10
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

Atlantic Water Circulation in the Canada Basin. (U)

DESCRIPTIVE NOTE: Technical rept., DEC 74 16P Newton,J. L. ;Coachman,L. K. ;
REPT. NO. TR-9
CONTRACT: N00014-67-A-0103-0021
PROJ: NR 307-326

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Ocean currents, *Arctic Ocean, Salinity, Flow fields, Circulation, Temperature, Depth (U)
IDENTIFIERS: Canada Basin (U)

Within the Canada Basin of the Arctic Ocean, water of Atlantic origin occupies the depths between 300 and 900 m. This water is characterized by a temperature maximum of +0.5 to +0.6C usually at about 500 m, and has salinities in the range 34.85 to 34.95 parts per thousand by weight. Atlantic water initially enters the Arctic Ocean east of Greenland at a temperature > 3.0C and salinity of about 35.00 parts per thousand by weight. It then moves across the Lomonosov Ridge north of Siberia, and flows east along the East Siberian shelf, apparently entering the Canada Basin north of the Chukchi Plateau. The circulation within the Canada Basin is anticyclonic, like the surface flow. This note presents the results of a re-examination of the Atlantic water flow in the Canada Basin. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A005 378 8/3
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

AIDJEX Interior Flow Field Study: Preliminary Report and Comparison with Previous Results (1972). (U)

DESCRIPTIVE NOTE: Technical rept., MAR 73 27P Newton,J. L. ;Coachman,L. K. ;
REPT. NO. TR-6
CONTRACT: N00014-67-A-0103-0021
PROJ: NR 307-326

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Flow fields, *Arctic Ocean, Wind, Sea ice, Motion, Experimental data, Measurement, Alaska (U)
IDENTIFIERS: AIDJEX project (U)

During the 1972 AIDJEX pilot study, the University of Washington conducted a field program to study the interior flow field of the Arctic Ocean. The working hypotheses of the 1972 experiment were similar to those of the 1970 and 1971 programs: (1) by making current and hydrographic measurements simultaneously in an array of fixed dimensions, one can determine how accurately Arctic Ocean currents can be estimated by traditional geostrophic methods, and the appropriate measurement scales; and (2) by knowing the ice motion and local weather conditions, one can investigate the responses of the ice and interior flow to the forces acting on them. This communication reports the preliminary results of the 1972 interior flow field measurements and summarizes some of the important similarities and differences observed during the three years of study. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A005 377 8/3 8/10 8/12
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

Observations of Ice Motion and Interior Flow Field During 1971 AIDJEX Pilot Study. (U)

DESCRIPTIVE NOTE: Technical rept., FEB 73 28P Newton,J. L. ;Coachman,L. K. ;
REPT. NO. TR-5
CONTRACT: N00014-67-A-0103-0021
PROJ: NR-307-326

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Sea ice, *Arctic Ocean, Flow fields, Motion, Oceanographic data, Temperature, Drift (U)
IDENTIFIERS: Beufort Sea, AIDJEX project (U)

As part of the 1971 AIDJEX Pilot Study, a field program was conducted to study the interior flow field of the Arctic Ocean. The program was designed to determine (1) how accurately Arctic Ocean Currents can be estimated using geostrophic calculations; (2) the horizontal and vertical coherence of the flow field; and (3) the relationship between the ice motion and the interior flow field. The experiment was located in the eastern Beaufort Sea during a two-week period 16 March to 2 April 1971. (U)

AD-A005 182 8/3
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

Year-Long Current Measurements in the Greenland-Spitsbergen Passage. (U)

DESCRIPTIVE NOTE: Technical rept., FEB 73 6P Aagaard,Knut ;Darnall,Clark ;Greisman,Paul ;
REPT. NO. TR-3, Contrib-711
CONTRACT: N00014-67-A-0103-0023
PROJ: NR-307-342

UNCLASSIFIED REPORT

Availability: Pub. in Deep-Sea Research, v20 p743-746 1973.

DESCRIPTORS: *Ocean currents, *Greenland Sea, Flowmeters, Norwegian Sea, Oceanographic data, Reprints (U)
IDENTIFIERS: Greenland spitsbergen passage (U)

Four current meters have been successfully deployed from one summer to the next in the 2600 m deep Greenland-Spitsbergen passage. The annual mean northward transport of the West Spitsbergen Current estimated from the current records is 8,000,000 cu m/sec. In the middle of the passage, the mean flow was southeast. The currents probably extend to the bottom. (Author) (U)

AD-A005 054 8/3
NOVA UNIV DANIA FLA PHYSICAL OCEANOGRAPHIC LAB

Numerical Model for Prediction of Surface Currents in the Ocean. (U)

DESCRIPTIVE NOTE: Final rept. 1 Jan-1 May 74, MAY 74 166P Goldstein,Mark ;Niiler,Peter ;
CONTRACT: DOT-CG-40056-A
MONITOR: USCG,CR/DC D-40-75,28/74

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with International Business and Research, Inc., Coral Gables, Fla.

DESCRIPTORS: *Ocean currents, *Ocean surface, *Continental shelves, Florida, Mathematical models, Tidal currents, Aerial photography, Wind, Data acquisition, Flowmeters, Dyes, Least squares method, Computer programs, FORTRAN (U)
IDENTIFIERS: DOT/5Z (U)

An ensemble of 136 observations of surface currents on the western Florida Shelf near 82 deg 30 min W, 25 deg 30 min N is reported. The method uses aerial photography of the position of a fixed and a freely floating dye marker. A least-square estimate of the offshore tidal currents is made from this ensemble, and Pollard's (1971) model of wind-driven currents is used to estimate the residual wind-driven flow. The projected vector diagrams of the surface wind and the total currents are computed for October and November of 1971. The principal conclusions are: (a) It is observed that there exists a lateral coherence of currents in a 16-km radius on the shelf; (b) no persistent current is predicted or observed over this two-month period, and the projected vector diagrams form an ensemble of closed loops. Implications for the drift of objects and pollutants on the shelf are discussed. (U)

AD-A004 956 8/3
HYDRONAUTICS INC LAUREL MD

Surface Effects an Analysis and Review of the Processes Involved and Phenomena Observed. (U)

DESCRIPTIVE NOTE: Technical rept., DEC 74 99P Phillips,O. M. ;
REPT. NO. TR-7211-9
CONTRACT: N00014-72-C-0509
PROJ: NR-062-472

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean waves, *Internal waves, *Ocean surface, Gravity waves, Ocean currents, Wind velocity, Thermoclines, Films, Surface properties, Interactions, Modulation, Resonance, Drift, Air water interactions (U)
IDENTIFIERS: Breaking waves, Swell (U)

This report analyzes and reviews the processes involved in the generation of modulations in short wave structure by internal waves. The emphasis is on field conditions where, in general, there is wind blowing, a mean current with vertical structure, long and short waves at different directions to the internal wave and possibly surface films. The applicability or otherwise of theoretical analyses and laboratory experiments to field situations is discussed, the problem being the variety of interacting phenomena found under natural conditions. Chapter headings are the following: Mean velocity structure above the thermocline; The variations in surface velocity resulting from internal waves; Surface films; Energy modulations in a surface wave train produced by direct interaction; Wave breaking. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A004 790 8/3 20/4
SACLANT ASW RESEARCH CENTRE LA SPEZIA (ITALY)

Turbulent Mixing in the Strait of Sicily. (U)

DESCRIPTIVE NOTE: Memorandum rept., JAN 75 18P Williams,Robert Bruce ;
REPT. NO. SACLANTCEN-SM-59

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: NATO Furnished.

DESCRIPTORS: *Ocean currents, *Turbulent flow, *Mediterranean Sea, Salinity, Kinetic energy, Salts, Spectrum analysis, Mixing, Friction, Diffusion, Oceanographic data (U)
IDENTIFIERS: *Sicily Strait (U)

;Contents: Universal similarity in turbulent fields; Turbulent diffusion coefficients; Velocity data; STD data; Estimates of turbulent parameters; Salt flux; Turbulent friction and time constant. (U)

AD-A004 619 8/3 8/10
RAND CORP SANTA MONICA CALIF

Ocean Circulation and Temperature Prediction Model: 1. The Pacific, (U)

OCT 73 72P Alexander,R. C. ;
REPT. NO. R-1296-ARPA
CONTRACT: DAHC15-73-C-0181, ARPA Order-189-1

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean models, *Ocean currents, *Pacific Ocean, Surface temperature, Mathematical models, Temperature, Wind, Heating, Predictions, Oceanographic data, Circulation (U)

The research was undertaken to develop a numerical model for monthly and seasonal predictions of temperatures and velocities in the upper layers of the ocean. The Pacific model represents one phase in the development of a world ocean model for climate dynamics experiments with a coupled atmospheric model. The circulation and temperature distribution in the upper layers of the Pacific Ocean are simulated by a two-level numerical model with a horizontal bottom at 300 m depth. The model is based on the primitive Eulerian equations and contains a free upper surface. The motion is driven by prescribed distributions of surface heating and wind stress, and is retarded by frictional stresses at the bottom and at the coasts. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A004 286 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Time and Length Scales of Baroclinic Eddies in the Central North Pacific Ocean, (U)

DEC 73 14P Bernstein,R. L. ;White,W. B. ;
CONTRACT: N00014-69-A-0200-6043

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Physical Oceanography, v4 n4 p613-624 Oct 74.

DESCRIPTORS: *North Pacific Ocean, *Ocean currents, *Eddy currents, Subtropical regions, Ocean models, Rotation, Bathythermograph data, Power spectra, Sea water, Temperature, Time, Length, Reprints (U)
IDENTIFIERS: Baroclinic eddies (U)

The time and length scales of baroclinic eddies in the eastern half of the North Pacific Subtroptical Gyre are examined. (Author) (U)

AD-A004 272 8/7 8/10
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Marine Geology of Atlantic Ocean North of the Arctic Circle. (U)

SEP 74 11P Johnson,G. L. ;Vogt,P. R. ;
PROJ: RR131-03, NR-083-284
TASK: RR131-03-01

UNCLASSIFIED REPORT
Availability: Pub. in Arctic Geology, Memoir n19 p161-170 1973.

DESCRIPTORS: *Marine geology, *North Atlantic Ocean, Marine geophysics, Norwegian Sea, Greenland Sea, Arctic regions, Plateaus, Ocean bottom topography, Ocean ridges, Oceanic crust, Geomagnetism, Paleontology, Reprints (U)
IDENTIFIERS: Sea floor spreading, Midocean ridges, Labrador Sea (U)

Magnetic and paleontologic data indicate that the Norwegian-Greenland sea opened about 60 m.y. ago with the initiation of sea-floor spreading along the axis of a midoceanic ridge. Within the Norwegian basin, evidence points toward an extinct ridge axis which shifted westward during the mid-Tertiary. Complex Iceland-style sea-floor spreading may have existed on the largely emergent Iceland plateau until about 10 m.y. ago, when Kolbeinsey Ridge became active. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0MO7

AD-A003 956 8/3 8/10 8/12
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Ocean Current Observations at the AIDJEX 1972 Main Camp. (1) The Oceanic Boundary Layer and Ice-Water Stress During AIDJEX 1972. (2) An Estimate of Internal Wave Drag on Pack Ice. (3). (U)

DESCRIPTIVE NOTE: Technical rept., DEC 74 68P Hunkins,Kenneth ;Fliegel, Myron ;
REPT. NO. TR-1
CONTRACT: N00014-67-A-0108-0039
PROJ: NR-307-359

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *Ocean currents, *Pack ice, *Air water interactions, Internal waves, Ocean waves, Boundary layer, Wind, Arctic Ocean, Stresses, Drag, Oceanographic data, Arctic regions (U)
IDENTIFIERS: AIDJEX program (U)

;Contents: Ocean current observations at the AIDJEX 1972 main camp; The ocean boundary layer and ice-water stress during AIDJEX 1972; and An estimate of internal wave drag on pack ice. (U)

AD-A003 885 8/1
ARCTIC INST OF NORTH AMERICA ARLINGTON VA

The Role of Ice in the Ecology of Marine Mammals of the Bering Sea. (U)

DESCRIPTIVE NOTE: Technical rept. 1958-1972,
74 19P Fay,Francis H. ;
REPT. NO. AINA-ONR-91.1
CONTRACT: N00014-70-A-0219-0001, Nonr-1138(01)
PROJ: NR-307-105

UNCLASSIFIED REPORT

Availability: Pub. in Oceanography of the Bering Sea, Chapter 19, p383-399 1974.

DESCRIPTORS: *Aquatic animals, *Bering sea, *Ice, *Habitability, Marine biology, Polar regions, Ecology, Survival(General), Food, Reproduction(Physiology), Ice islands, Reprints (U)

The ice pack of the Bering Sea is a major component of the habitat of about one million marine mammals of 17 species, including the bowhead whale, (Balaena mysticetus), belukha (Delphinapterus leucas), walrus (Odobenus rosmarus), bearded seal (Erignathus barbatus), ribbon seal (Histriphoca fasciata), ringed seal (Pusa hispida), largha harbor seal (Phoca vitulina largha), and the polar bear (Ursus maritimus). It is widely recognized that the ice of this and other sub-polar and polar seas is important to such mamals in at least two ways: first, it serves as a substrate on which pinnipeds haul out to sleep and bear their young, and second, it forms a rigid barrier through which pinnipeds and cetaceans alike must find or make holes in order to have access to the air that they breath and the sea that holds their food. For some species of polar marine mammals, the quality and quantity of ice may be as important in habitat selection as are terrain and vegetation to terrestrial mammals. For others, the mere presence of ice may be disadvantageous and may require them to undergo extensive migrations in order to aviod it. The study of ice as a major factor in the ecology of polar marine mammals is still in a rudimentary stage.

(U)

AD-A003 614 8/3 8/12
WASHINGTON UNIV SEATTLE DEPT OF ATMOSPHERIC SCIENCES

Theoretical Calculations of Internal Wave Drag on Sea Ice. (U)

DESCRIPTIVE NOTE: Technical rept.,
74 14P Rigby,Fred ;
REPT. NO. TR-26
CONTRACT: N00014-67-A-0103-0007
PROJ: NR-307-252

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *Internal waves, *Sea ice, *Arctic Ocean, Ocean waves, Drag, Ocean models, Mathematical models, Ocean currents, Stratification, Pressure, Stresses (U)

Because of the density stratification in the upper part of the Arctic Ocean, the movement of pressure ridge keels through the mixed layer can create internal waves in the vicinity of the pycnocline. These waves transport energy away from the keels and thereby generate drag on the ice. The study defines the conditions under which wave drag could contribute significantly to the total water stress. The development of internal waves downstream from a semielliptical keel is described by a simple two-dimensional, two-layer ocean model. Results calculated from the model show the dependence of wave drag on keel depth, current speed, depth of the upper layer, and density change across the interface between the layers. Comparison of the relative magnitudes of form drag and wave drag suggests that wave drag is not negligible near large keels when the current is flowing strongly. (U)

AD-A003 606 8/12 8/10 13/2
WASHINGTON UNIV SEATTLE DEPT OF ATMOSPHERIC SCIENCES

Annual Report No. 6, 1 Oct 73-30 Sep 74, (U)

DEC 74 30P Untersteiner,Norbert ;Maykut, Gary ;Martin,Seelye ;Grenfell,Thomas ;Roulet, Ronald ;
CONTRACT: N00014-67-A-0103-0007
PROJ: NR-307-252

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Annual rept. no. 5, AD-771 443.

DESCRIPTORS: *Sea ice, *Desalination, *Arctic Ocean, Thickness, Thermodynamics, Optical properties, Crystal growth, Offshore drilling, Water pollution, Oils, Oil spills, Radiation effects, Internal waves, Ablation, Boundary layer flow (U)

Research topics include: (a) growth and ablation of sea ice, (b) sea ice dynamics, (c) optical properties of sea ice, (d) desalination of sea ice, (e) thickness distribution of sea ice, and (f) generation of internal waves in the ocean by pressure ridge keels. (U)

AD-A003 563 8/10
OREGON STATE UNIV CORVALLIS SCHOOL OF OCEANOGRAPHY

The Determination of the Index of Refraction Distribution of Oceanic Particulates, (U)

MAR 74 7P Zaneveld,J. Ronald V. ; Roach,David M. ;Pak,Hasong ;
REPT. NO. Ref 74-18
CONTRACT: N00014-67-A-0369-0007
PROJ: NR-083-102

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, V79 n27 p4091-4095, 20 Sep 74.
SUPPLEMENTARY NOTE:

DESCRIPTORS: *Particulates, *Oceanographic data, *Marine geophysics, Refractive index, Particle size, Mie scattering, Particles, Light scattering, Reprints (U)

A method is described for determining the index of refraction distribution and the particle size distribution of suspended particles. The distributions are obtained by breaking down an observed volume scattering function into its contributing components. The component scattering functions are calculated using Mie theory. The component functions include all size distributions and indices of refraction that can be expected to be present. The method was applied to a volume scattering function observed in the Sargasso Sea. Forty components were used with five different indices of refraction and eight different particle size distributions. The resultant index of refraction distribution was bimodal. Components with indices of 1.05 and 1.15 dominate the calculated volume scattering function. The calculated particle size distribution falls within experimentally determined limits for the size distribution. (Author) (U)

AD-A003 560 8/10
OREGON STATE UNIV CORVALLIS SCHOOL OF OCEANOGRAPHY

Compilation of Reprints. (U)

NOV 74 78P Gordon,L. I. ;Jones,L. B. ;Alvarez-Borrego,S. ;Park,P. K. ;Burt, Wayne ;
REPT. NO. Ref-74-5, Ref-74-6
CONTRACT: N00014-67-A-0369-0007, N00014-68-A-0148
PROJ: NR-083-102, NR-083-230

UNCLASSIFIED REPORT

Availability: Pub. in various Jnls. 1973 and 1974.
SUPPLEMENTARY NOTE: Includes rept. nos. Ref-74-10, Ref-74-14, Ref-74-15, Ref-74-16, Ref-74-17 and Ref-74-18.

DESCRIPTORS: *Oceanographic data, Sea water, Temperature, Salinity, Carbon dioxide, Pacific Ocean, Wind, Diurnal variations, Oregon, Heat flux, Marine geophysics, Marine geology, Geomagnetism, Magnetic anomalies, Earth crust, Tectonics, Carbonates, Thermoclines, Particulates, Refractive index, Peprints (U)
IDENTIFIERS: Aerodynamic coefficients (U)

Contents: The Effect of Temperature on Carbon Dioxide Partial Pressures in Seawater; Oxygen-Total Inorganic Carbon Dioxide Relationship in the Pacific Ocean; Diurnal Variations of Winds over an Upwilling Region off Oregon; A Note on Bulk Aerodynamic Coefficients for Sensible Heat and Moisture Fluxes; Comments on 'Filtering Marine Magnetic Anomalies' by Hans Schouten and Keith McCamy; Geomagnetic Reversals and Crustal Spreading Rates during the Miocene; Bicarbonate and carbonate Ion-Pairs and a Model of Seawater at 25 C; The Determination of the Index of Refraction Distribution of Oceanic Particulates. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A003 545 8/10 8/12
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

An Oceanographic Investigation of Mesostructure Near Arctic Ice Margins. (U)

DESCRIPTIVE NOTE: Master's thesis,
SEP 74 53P Corse,William Russell ;

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Chukchi Sea, *Sea Ice, Temperature, Anomalies, Density, Heat, Ocean currents, Alaska, Ocean surface, Surface temperature, Tides, Theses, Salinity, Arctic regions (U)
IDENTIFIERS: MIZPAC 71 program (U)

The origin and continuity of complex temperature profiles observed in the Chukchi Sea as part of the MIZPAC 71 program was investigated. The positive temperature anomalies, termed mesostructure elements were found to have their heat source in the warm coastal current. Interleaving coupled with mixing in the marginal ice zone due to ice protuberances was found to account for the temperature features observed. Particular mesostructure elements were traced for several km. The deeper structure was found to occur in some association with a rhythmic deepening of constant density surfaces, possibly due to tidal influence. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOMO7

AD-A003 085 8/10
COAST GUARD WASHINGTON D C OCEANOGRAPHIC UNIT

Oceanographic Observations, North Atlantic Ocean Station BRAVO, 14 November 1967-16 November 1969, (U)

APR 74 541P Shuhy,Joseph L. ;
REPT. NO. USCG-373-63

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *North Atlantic Ocean, Temperature, Salinity, Geopotential, Underwater sound, Seasonal variations, Oceanographic ships, Surface waters, Anomalies, Depth, Tables(Data), Acoustic velocity (U)
IDENTIFIERS: WHEC 35 vessel, Labrador Sea (U)

Observed and interpolated temperature and salinity data, plus computed sigma-t, geopotential anomalies, and sound velocities are presented for 663 oceanographic stations occupied by U.S. Coast Guard cutters at Ocean Station BRAVO (centered at 56deg30minN, 51deg00minW) from November 1967 to November 1969. Vertical distribution plots for temperature and salinity are presented as well as monthly averages of temperature and salinity for selected levels from January 1964 to November 1969. Unusually cold (2.2C) and fresh (34.3 parts per thousand by weight) surface waters present at BRAVO in 1968 and 1969 as compared to 1964 through 1967 (3.3C, 34.5 parts per thousand by weight) are discussed. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOMO7

AD-A003 058 8/1 8/3 8/7
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Paleogeography, Paleobiogeography and the History of Circulation in the Atlantic Ocean. (U)

DESCRIPTIVE NOTE: Technical rept.,
74 65P Berggren,W. A. ;Hollister, C. D. ;
REPT. NO. WHOI-74-84, WHOI-Contrib-2717
CONTRACT: N00014-66-C-0241, NSF-GA-16098
PROJ: NR-083-004

UNCLASSIFIED REPORT
Availability: Pub. in Studies in Paleo-Oceanography, Society of Economic Paleontologists and Mineralogists, Special Pub-20 p126-186 1974.
SUPPLEMENTARY NOTE:

DESCRIPTORS: *Atlantic Ocean, *ocean currents, *Geologic age determination, Marine geology, Circulation, Ocean bottom topography, Continental shelves, Drift, Marine biology, Tectonics, Reprints (U)
IDENTIFIERS: Paleogeography, Eurasia, Fauna, Plate tectonics (U)

This history of surface and bottom current circulation is delineated in the Atlantic and Tethys-Mediterranean Ocean over the past 200 million years within the framework of continental drift and sea-floor spreading. An intimate relationship between changing paleogeography, paleobiogeography and paleocirculation is demonstrated for the Mesozoic and Cenzoic. Major Mesozoic events include: (1) initial opening of the North Atlantic Ocean about 180-190 my ago and the subsequent separation of Eurasia and Africa (about 160-170 my ago) allowing a Tethyan-North Atlantic faunal exchange; (2) separation of Africa and South America (about 95 my ago) allowing North-South Atlantic surface water mass and faunal exchange. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A003 057 8/1 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

'Stygiomedusa fabulosa' from the North Atlantic: Its Taxonomy, with a Note on its Natural History. (U)

DESCRIPTIVE NOTE: Technical rept., 73 7P Harbison,G. R. ;Smith,K. L. , Jr.;Backus,R. H. ;
REPT. NO. WHOI-74-91, WHOI-Contrib-2964
CONTRACT: N00014-66-C-0241, NSF-GZ-1508
PROJ: NR-083-004

UNCLASSIFIED REPORT
Availability: Pub. in J. Mar. Biol. Ass. U.K., 53 p615-617 1973.
SUPPLEMENTARY NOTE:

DESCRIPTORS: *North Atlantic Ocean, *Taxonomy, *Marine biology, History, Fishes, Reprints (U)
IDENTIFIERS: Stygiomedussa, Thalassobathia, Mesopelagic scyphomedusa, Mesopelagic zoology (U)

The largest recorded specimen of the mesopelagic scyphomedusa, Stygiomedusa fabulosa Russell 1959, was taken in the North Atlantic (49 53 N, 33 18 W). Umbrella diameter was 140 cm with an oral arm length of 164 cm. This specimen is morphologically intermediate between the nominal species of the genus, S. fabulosa and S. stauchi. This suggests that S. stauchi is not a distinct species. The midwater fish Thalassobathia peligica was captured in the same haul and could live in association with large scyphomedusae. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A003 004 8/10 8/7 8/5
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Cruise Data Report. R/V CHAIN Cruise 115 Legs 3 and 4, SOUTHLANT Expedition. (U)

DESCRIPTIVE NOTE: Technical rept., DEC 74 61P Gegg,S. R. ;Groman,R. C. ;Kroll,J. D. ;Richards,D. A. ;
REPT. NO. WHOI-74-95
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *Oceanographic data, *South Atlantic Ocean, Navigation charts, Bathymetry, Gravity anomalies, Magnetic anomalies, Oceanographic ships, Hydrographic surveying, Seismic reflection, Tables(Data) (U)
IDENTIFIERS: Chain vessel, Free air gravity anomalies (U)

The report summarizes the geological and geophysical activities which were undertaken during Leg 3 and 4 of R/V CHAIN Cruise 115 (SOUTHLANT Expedition). A series of charts and profiles display the navigation, bathymetry, total field magnetic anomaly, and free air gravity anomaly measurements, as well as the locations of coring, camera and hydrographic stations. (U)

AD-A003 003 8/10 8/7
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF UNDERWAY DATA PROCESSING GROUP

Index of S.I.O. Cruises with Underway Geophysical Data (Depth, Magnetics, or Subbottom Profiles), (U)

OCT 74 10P Psaropulos,V. ;Smith,S. M. ;

REPT. NO. SIO-Ref-74-34
CONTRACT: N00014-69-A-0200-6049

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *Oceanographic data, Marine geophysics, Indexes, Geomagnetism, Oceanographic ships, Surveys, Ocean bottom sampling, Depth finding (U)
IDENTIFIERS: Oceanographic surveys (U)

The index is an outgrowth of one originally developed for internal use by the Underway Data Processing Group to indicate the status of digitized data. It is not a complete index of all oceanographic cruises ever carried out by the Institution. It contains a list of geophysical, geologic data regarding depth, magnetic and profiler records, data from deep sea drilling project, and other related data. (U)

AD-A002 471 8/3 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Cruise Report, Knorr 39. (U)

DESCRIPTIVE NOTE: Technical rept.,
JUN 74 53P Tupper,George H. ;
REPT. NO. WHOI-74-42
CONTRACT: N00014-66-C0241
PROJ: NR-083-004

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *Ocean currents, *Mooring, *Gulf Stream, Buoys, Ocean bottom topography, Deep water, Fishes, Dacron, Oceanographic ships, North Atlantic Ocean, Sound ranging, Bathythermograph data, Ocean bottom sampling, Marine biology (U)
IDENTIFIERS: Muir Seamount, Fishbites, Sofar, Underwater acoustics, Knorr Vessel (U)

KNORR-39 was a single leg cruise, Woods Hole to Woods Hole. Duration of the cruise was eighteen days, April 8 through April 26, 1974. Nineteen deep-sea moorings were launched and nine recovered, with CTD casts to the bottom at each mooring site. Mooring locations include Site D, the Gulf Stream, the Muir Seamount, the MODE area. One of the Gulf Stream moorings was a three-month engineering test of armored dacron in a high fishbite area, to be recovered in July. A disappointing failure of a factory wire termination cut short a two-day Surface Mooring Dynamics Experiment in the MODE area. XBT's were taken at Site D and in the Gulf Stream. A SOFAR float was launched in the MODE area and a deep-sea biological sample was taken at the Muir Seamount. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOMO7

AD-A002 328 8/10 8/3 8/7 8/1
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Physical and Chemical Data. Piquero Expedition 16 December 1968 - 16 April 1969. (U)

74 62P
REPT. NO. SIO-Ref-74-27
CONTRACT: N00014-69-A-0200-6049

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Sponsored by National Science Foundation, Washington, D.C., Atomic Energy Commission, Washington, D.C., and Office of Naval Research, Arlington, Va.

DESCRIPTORS: *Oceanographic data, *South Pacific Ocean, Helium, Concentration(Composition), Air guns, Faults(Geology), Continental shelves, South America, Chile, Ocean currents, Plankton, Antarctic regions, Coastal regions (U)
IDENTIFIERS: Atacama Fault, Antarctic Circumpolar Current, Chile Current, Antarctic Peninsula, Piquero expedition, Cape Horn (U)

The primary purpose of the PIQUERO Expedition was the following: (1) To obtain more data on noble gas concentrations, mainly on the excess helium component present in deep Southeast Pacific waters attributable to an influx of helium from the solid earth; (2) to conduct a sub-bottom (air gun) profiler survey of a possible extension of the Atacama Fault on the continental shelf near Taltal, Chile; (3) to study the circulation of the Chile Current between 40 degrees S and 57 degrees S and of the Antarctic Circumpolar Current in the area between Cape Horn and the Antarctic Peninsula; and (4) to study the distribution of plankton in relation to prevailing hydrographic conditions and concentrations of nutrient chemicals in coastal and oceanic waters off western South America. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOMO7

AD-A002 265 8/10 6/3
COAST GUARD WASHINGTON D C OCEANOGRAPHIC UNIT

Oceanography in the Gulf of Maine and Adjacent Waters in Support of the International Commission for Northwest Atlantic Fisheries January 1968; January-February 1969. (U)

DESCRIPTIVE NOTE: Oceanographic rept., AUG 74 158P Light,Melvin ;Henderson, Scott J. ;
REPT. NO. USCG-373-65

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Maine Gulf, *Fisheries, *North Atlantic Ocean, Thermoclines, Salinity, Physical properties, Sea water, Oxygen, Density, Chlorophylls, Marine meteorology, Surface waters, Gulf Stream, Salt water, Oceanographic ships, Bathythermograph data (U)
IDENTIFIERS: *Salt water intrusion, Dissolved oxygen, WAGO 295 Vessel, MSC 289 Vessel (U)

The physical oceanography of the Gulf of Maine and adjacent waters in January 1968 and January - February 1969 is described. Temperature, salinity, and density data are presented in surface contours and profiles. Dissolved oxygen and chlorophyll data are presented in section profiles. Climatic conditions of the region were reflected in the temperature and salinity of the surface waters. Intrusion of Gulf Stream waters into the Gulf of Maine is inferred from T-S relations and disolved oxygen data. (U)

AD-A002 111 8/10
OREGON STATE UNIV CORVALLIS SCHOOL OF OCEANOGRAPHY

Reply to 'Comment on Method for the Determination of the Index of Refraction of Particles Suspended in the ocean', (U)

APR 73 2P Ronald,J. ;Zaneveld,V. ; Pak,Hasong ;
REPT. NO. Ref-73-35
CONTRACT: N00014-67-A-0369-0007
PROJ: NR-083-102

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of the Optical Society of America, v63 n12 p1618 Dec 73.
SUPPLEMENTARY NOTE:

DESCRIPTORS: *Oceanography, Colloids, Refractive index, Mie scattering, Optical properties, Reprints (U)

Reprint: Reply to 'Comment on Method for the Determination of the Index of Refraction of Particles Suspended in the ocean'.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A002 101 8/10 8/1
OREGON STATE UNIV CORVALLIS SCHOOL OF OCEANOGRAPHY

Compilation of Reprints. (U)

OCT 74 112P
REPT. NO. Ref-73-20, Ref-73-27
CONTRACT: N00014-67-A-0369-0007
PROJ: NR-083-102

UNCLASSIFIED REPORT
Availability: Pub. in various Jnls. 1972 and 1973.
SUPPLEMENTARY NOTE: Includes Rept. nos. Ref-73-28 thru Ref-73-35. Also includes Rept. nos. 73-27 thru 73-34.

DESCRIPTORS: *Oceanography, Marine biology, Marine geophysics, Magnetic fields, Plankton, Sea water, Ionization, Salinity, Calcite, Calcium compounds, Carbonates, Galapagos Islands, Refractive index, Dissociation, Ocean currents, Reprints (U)
IDENTIFIERS: Swimbladders, Myctophids (U)

Contents: Swimbladder Morphology and Specific Gravity of Myctophids off Oregon; Vector Magnetic Data for Detecting Short Polarity Intervals in Marine Magnetic Fields; A Technique for the Estimation of Indices of Refraction of Marine Phytoplankters; Measurement of the Apparent Dissociation Constants of Carbonic Acid in Seawater at Atmospheric Pressure; Ionization of Water in Seawater; The Solubility of Calcite in Seawater at Atmospheric Pressure and 35 parts/thousand Salinity; Calcium Carbonate Retention in Supersaturated Seawater; Origin and Development of Surveyor Deep Sea Channel; The Cromwell Current on the East Side of the Galapagos Islands; Reply to Comment on Method for the Determination of the Index of Refraction of Particles Suspended in the Ocean. (U)

AD-A002 067 4/2
NAVAL WEATHER SERVICE ENVIRONMENTAL DETACHMENT ASHEVILLE N C

Northeast Pacific Environmental Scenario. (U)

OCT 74 264P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Errata included. Supersedes report dated Jun 74, AD-781 673.

DESCRIPTORS: *North Pacific Ocean, *Marine meteorology, *Climate, Aleutian Islands, Wind, Ocean waves, Ceiling, Fog, Visibility, Ocean surface, Atmospheric temperature, Atmospheric precipitation, Graphs (U)
IDENTIFIERS: North Pacific Ocean, Scenarios (U)

The environmental study covers the area 35-45 degrees N and 140-160 degrees W as well as Ocean Weather Stations (OWS's) P and N. The study area has been divided into four sub-areas. The OSW's are included because their nearly complete chronological data set is the only marine data in the vicinity which permits persistence (duration) studies in a detailed manner. Though the OWS's are quite remote from the study area, inter-comparison of individual elements that are available for all areas (in Part A - Probability Graphs) will aid in estimation of persistence values in the study area by use of those given for the OWS's (in Part B - Persistence Graphs). (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A002 056 8/3
NEW YORK UNIV BRONX DEPT OF METEOROLOGY AND OCEANOGRAPHY

Wave Refraction Phenomena over the Continental Shelf near the Chesapeake Bay Entrance. (U)

DESCRIPTIVE NOTE: Technical memo., OCT 74 54P Chao,Yung-Yao ;
CONTRACT: DACW72-71-C-0012
MONITOR: CERC TM-47

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *Ocean waves, *Chesapeake Bay, Continental shelves, Refraction, Lighthouses, Computer applications, Water waves (U)
IDENTIFIERS: Shoaling (U)

Based on the refraction equations that account for the combined effects of bottom topography and spherical earth effects, and correct to the Mercator Projection, a computer refraction program was written and specialized to the area near the Chesapeake Light Station. A cubic spline interpolation scheme is used to define the depth value at each grid point from available depth data in appropriate bathymetric charts. In this computer program a change of mesh size is allowed to meet the change of topographic scale. (U)

AD-A001 973 4/2
NAVAL WEATHER SERVICE COMMAND WASHINGTON D C

Summary of Synoptic Meteorological Observations: Caribbean and Nearby Island Coastal Marine Areas. Volume 6. Area 30 - Gulf of Venezuela, Area 31 - Riohacha, Area 32 - Cartagena, Area 33 - Colon, Area 34 - Gulf of Panama, Area 35 - Galapagos Islands. (U)

NOV 74 485P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 5, AD/A-001 918.

DESCRIPTORS: *Marine meteorology, *Coastal regions, *Caribbean Sea, *Atlantic Ocean Islands, Meteorological phenomena, Air water interactions, Climate, Atmospheric precipitation, Fog, Cloud cover, Ocean waves, Atmospheric temperature, Gulfs, Galapagos Islands, Panama, Venezuela, Colombia (U)
IDENTIFIERS: Synoptic meteorology, *Panama Gulf, *Colon(Panama), *Cartagena(Colombia), Riohacha(Colombia), *Venezuela Gulf (U)

The data contained in these tables were obtained from tape data Family 11 (TDF-11), Marine Surface observations. TDF-11 was primarily funded by the Naval Weather Service Command and selected by NWSD Asheville as the most comprehensive collection of marine surface observations from which to develop a series of coastal marine summaries. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A001 918 4/2
NAVAL WEATHER SERVICE COMMAND WASHINGTON D C

Summary of Synoptic Meteorological Observations: Caribbean and Nearby Island Coastal Marine Areas. Volume 5. Area 24 - Virgin Islands, Area 25 - Leeward Islands, Area 26 - Windward Islands, Area 27 - Trinidad, Area 28 - Barcelona, Area 29 - Caracas. (U)

NOV 74 485P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 4, AD/A-001 457, and Volume 6, AD/A-001 073.

DESCRIPTORS: *Marine meteorology, *Coastal regions, *Caribbean Sea, *Atlantic Ocean Islands, North Atlantic Ocean, Meteorological phenomena, Air water interactions, Climate, Atmospheric precipitation, Fog, Cloud cover, Ocean waves, Atmospheric temperature, Venezuela, Virgin Islands, Pacific Ocean Islands, West Indies, Lesser Antilles, Trinidad (U)
IDENTIFIERS: Synoptic meteorology, *Leeward Islands, *Windward Islands, *Barcelona(Venezuela), *Caracas(Venezuela) (U)

The data contained in these tables were obtained from tape data Family 11 (TDF-11), Marine Surface observations. TDF-11 was primarily funded by the Naval Weather Service Command and selected by NWSD Asheville as the most comprehensive collection of marine surface observations from which to develop a series of coastal marine summaries. (U)

AD-A001 912 4/2
NAVAL WEATHER SERVICE COMMAND WASHINGTON D C

Summary of Synoptic Meteorological Observations: Caribbean and Nearby Island Coastal Marine Areas. Volume 3. Area 12 - Hispaniola South, Area 13 - Windward Passage, Area 14 - Grand Bahama, Area 15 - Nassau, Area 16 - San Salvador, Area 17 - Acklins Island. (U)

NOV 74 485P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD/A-001 031, and Volume 4, AD/A-001 457.

DESCRIPTORS: *Marine meteorology, *Coastal regions, *Caribbean Sea, *Atlantic Ocean Islands, North Atlantic Ocean, Meteorological phenomena, Air water interactions, Climate, Atmospheric precipitation, Fog, Cloud cover, Ocean waves, Atmospheric temperature, Channels(Waterways), Haiti, Bahama Islands (U)
IDENTIFIERS: Synoptic meteorology, *Windward Passage, *Grand Bahama Island, *Nassau(Bahama Islands), *Acklins Island, *San Salvador Island (U)

The data contained in these tables were obtained from tape data Family 11 (TDF-11), Marine Surface observations. TDF-11 was primarily funded by the Naval Weather Service Command and selected by NWSD Asheville as the most comprehensive collection of marine surface observations from which to develop a series of coastal marine summaries. (U)

AD-A001 591 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Seismic Profiling between Bowers Ridge and Shirshov Ridge in the Bering Sea, (U)

MAR 74 4P Rabinowitz,Philip D. ;
REPT. NO. LDGO-2145
CONTRACT: N00014-67-A-0108-0004, NSF-GA-27281
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub, in Jnl. of Geophysical Research, v79 n32 p4977-4979, 10 Nov 74.
SUPPLEMENTARY NOTE:

DESCRIPTORS: *Marine geology, *Ocean ridges, Bering Sea, Seamounts, Aleutian Islands, Seismic waves, Geologic formation, Anomalies, Sediments, Ocean bottom topography (U)
IDENTIFIERS: Bowers ridge, Shirshov ridge (U)

The results of a seismic profiler grid survey are given for the region of the channel separating Bowers and Shirshov ridges. Two basements trends are observed beneath the sediments of this channel. One of these extends west from Bowers ridge and suggests the continuity of this ridge beneath the sea floor. The second extends east from Shirshov ridge. The axes of the subbottom continuations of the ridges are separated by about 10 km. This separation suggests that bowers and Shirshov ridges have different structural origins. (AUthor) (U)

AD-A001 567 8/3 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY SAN DIEGO CALIF MARINE PHYSICAL LAB

Direct Measurements of Turbulence in the Pacific Equatorial Undercurrent, (U)

AUG 74 106P Williams,Robert Bruce ;
REPT. NO. SIO-Ref-74-19, MPL-U-62/74
CONTRACT: N00014-69-A-0200-6002
PROJ: NR-260-103

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *Ocean currents, *Turbulent flow, *Pacific Ocean, Equatorial regions, Temperature, Diffusion, Momentum, Heat flux, Buoyancy, Flowmeters, Subsurface, Ocean waves, Beaches, Anomalies, Mixing (U)
IDENTIFIERS: *Cromwell Current (U)

;Contents: Turbulence theories and implications of universal similarity in turbulent fields; Momentum and energy equations; Turbulent diffusion coefficients and heat flux; Work done by turbulence on buoyancy forces; Experimental setting; Data, results and discussion; Implications to the undercurrent flow. (U)

AD-A001 457 4/2
NAVAL WEATHER SERVICE COMMAND WASHINGTON D C

Summary of Synoptic Meteorological Observations Caribbean and Nearby Island Coastal Marine Areas. Volume 4. Areas 18 - Hispaniola North, Area 19 - Santo Domingo, Area 20 - Mona Passage, Area 21 - Puerto Rico South, Area 22 - Puerto Rico North, Area 23 - Vieques. (U)

NOV 74 484P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD/001 031.

DESCRIPTORS: *Marine meteorology, *Coastal regions, *Caribbean Sea, North Atlantic Ocean, Air water interactions, Climate, Atmospheric precipitation, Fog, Cloud cover, Visibility, Ocean waves, Atmospheric temperature, Dominican Republic, West Indies, Puerto Rico (U)
IDENTIFIERS: Mona passage, Synoptic meteorology, Vieques Island (U)

The data contained in these tables were obtained from tape data Family II (TDF-11), Marine Surface observations. TDF-11 was primarily funded by the Naval Weather Service Command and selected by NWSD Asheville as the most comprehensive collection of marine surface observations from which to develop a series of coastal marine summaries. (U)

AD-A001 300 8/10
ENVIRONMENTAL RESEARCH AND TECHNOLOGY INC LEXINGTON MASS

Oceanographic Studies Using Satellite Data: Detection of Near-Shore Phenomena in ERTS Imagery. (U)

DESCRIPTIVE NOTE: Final rept. Jun-Dec 73 on Task 2,
JAN 74 100P Bowley,Clinton J. :Barnes, James C. ;
REPT. NO. ERT-P-532-1
CONTRACT: N66314-73-C-1749
PROJ: W3713
MONITOR: EPRF TR-1-74(ERT)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *Coastal regions, *Oceanographic data, Photographs, Photographic images, Arctic regions, United States, New England, New York, New Jersey, California, Oregon, Washington(State), Texas, Louisiana, Mississippi, Florida, Bering Sea, Sedimentation, Turbidity, Sediment transport, Ice reporting, Sea ice, Pack ice, Thawing, Wastes, Plumes, Ocean currents, Eddy currents, Boundaries, Anomalies (U)
IDENTIFIERS: ERTS-1 satellite (U)

The detection of near-shore phenomena in the ERTS-1 four-channel, multispectral scanner (MSS) imagery was investigated. Selected imagery containing near-shore patterns in several geographical locations are catalogued with documentation of the types of phenomena detected. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A001 129 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Space/Time Scales of Fluctuations of Ocean Temperature, (U)

AUG 74 31P Barnett,T. P. ;Bernstein, R. L. ;
REPT. NO. S10-Ref-74-23
CONTRACT: N00014-69-A-0200-6043

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Report on North Pacific Experiment - NORPAX.

DESCRIPTORS: *Oceanographic data, *Buoys, *North Pacific Ocean, Temperature, Diurnal variations, Spectrum analysis, Ocean surface, Surface temperature, Motion, Power spectra, Mooring, Seasonal variations, Time series analysis (U)

Buoys have been moored in a variety of locations in the central North Pacific during the last five years as part of the North Pacific Study. These buoys have returned numerous data as documented by Tubbs, et al (1972). This report presents the results obtained from spectral and cross-spectral analysis of selected sets of the data. (U)

AD-A001 031 4/2
NAVAL WEATHER SERVICE COMMAND WASHINGTON D C

Summary of Synoptic Meteorological Observations Caribbean and Nearby Island Coastal Marine Areas. Volume 2. Area 7 - Cayman, Area 8 - Jamaica West, Area 9 - Jamaica South, Area 10 - Jamaica North, Area - 11 Jamaica Southeast. (U)

NOV 74 403P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-787 723, and Volume 4, AD/A-001 457.

DESCRIPTORS: *Marine meteorology, *Coastal regions, *Caribbean Sea, West Indies, Meteorological phenomena, Air water interactions, Climate, Atmospheric precipitation, Fog, Cloud cover, Tables(Data), Visibility, Atmospheric temperature, Meteorological charts, Jamaica (U)
IDENTIFIERS: Cayman Island, Synoptic meteorology (U)

The data contained in these tables were obtained from tape data Family 11 (TDF-11), Marine Surface observations. TDF-11 was primarily funded by the Naval Weather Service Command and selected by NWSD Asheville as the most comprehensive collection of marine surface observations from which to develop a series of coastal marine summaries. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD-A001 002 8/3
ROSENSTIEL SCHOOL OF MARINE AND ATMOSPHERIC SCIENCE MIAMI FLA

First Results from the Equatorial PCM Experiment During GATE, Phase II. (U)

DESCRIPTIVE NOTE: Preliminary rept., NOV 74 26P Wooster,Warren S. ;
CONTRACT: N00014-67-A-0201-0013

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *Ocean currents, *Atlantic Ocean, Flowmeters, Oceanographic ships, Buoys, Oceanographic equipment, Radar equipment, Temperature, Bathythermograph data, Equatorial regions (U)
IDENTIFIERS: GATE project (U)

;Contents: Long, westward waves in the Upper Equatorial Atlantic; Meander motions in the Equatorial Atlantic; Fluctuations in the vertical structure of the Atlantic Equatorial Undercurrent; Current profiling observations by the R/V Capricorne. (U)

AD-A000 865 8/3
WOOSTER COLL OHIO

Tracing Surface Flow with Surface Isotherms. (U)

DESCRIPTIVE NOTE: Technical rept., OCT 74 14P Saunders,Peter M. :
REPT. NO. WHOI-74-75, WHOI-Contrib-3118
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT

Availability: Pub. in the Memoires Societe Royale des Sciences de Liege, 6Ser, v6 p99-108 1973.
SUPPLEMENTARY NOTE:

DESCRIPTORS: *Surface temperature, *Ocean surface, Mapping, Airborne, Bathythermograph data, Nortn Atlantic Ocean, Flow fields, Turbulent flow, Isotherms (U)

Repeated mapping of the surface temperature of the ocean yields estimates of both time derivatives and horizontal gradients. If the contribution to the time derivative from vertical turbulent fluxes can be estimated (or is small) then the component of flow normal to the isotherms can be inferred. The flow component parallel to isotherms can not be inferred but a few direct observations of current removes this ambiguity and enables the flow field to be mapped. (Author) (U)

AD-A000 799 8/3 8/10 8/12 4/2
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Physical and Chemical Data from the Nemo Expedition in the Ross Sea Aboard USCGC NORTHWIND (Ice Breaker) 2-23 February 1972. (U)

DESCRIPTIVE NOTE: Data rept. 74 29P
REPT. NO. SIO-Ref-74-15
CONTRACT: N00014-69-A-0200-6006

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *South Pacific Ocean, *Oceanographic Data, *Antarctic regions, Icebreakers, Patrol craft, Chemical properties, Sea water, Ocean bottom sampling, Fluid flow, Sea ice, Deep water, Marine meteorology, Tritium, Plankton, Temperature, Ocean surface (U)
IDENTIFIERS: WAGB 282 Vessel, Ross Sea (U)

The purpose of the USCGC Northwind's work was to measure the characteristics of the deep water in the western end of the Southeast Pacific Basin (71 degrees S to 75 degrees S and 140 degrees W to 170 degrees W) in order to determine whether bottom water formed in the Ross Sea flows into the Basin. (Author) (U)

AD-A000 730 8/3 8/10
ROSENSTIEL SCHOOL OF MARINE AND ATMOSPHERIC SCIENCE MIAMI FLA

The Cyclesonde: An Unattended Vertical Profiler for Scalar and Vector Quantities in the Upper Ocean, (U)

OCT 73 19P Leer,John Van ;Duing, Walter ;Erath,Robert ;Kennelly,Edward ;Speidel, Arthur ;
REPT. NO. Contrib-1717
CONTRACT: N00014-67-A-0201-0013, NSF-GA-34009
PROJ: NR-083-060

UNCLASSIFIED REPORT
Availability: Pub. in Deep-Sea Research, v21 p385-400 1974.
SUPPLEMENTARY NOTE: Prepared in cooperation with Grumman Aerospace Corp., Bethpage, N.Y. Revision of report dated 4 Jun 73. Sponsored in part by Grant NSF-GX-31264.

DESCRIPTORS: *Oceanographic equipment, *Ocean currents, *Oceanographic data, Platforms, Pressure, Temperature, Velocity, Automatic, Buoyancy, Motion, Recording systems, Mooring, Sampling, Sequences, Deep water, Shallow water (U)
IDENTIFIERS: *Cyclesondes (U)

An instrument, the Cyclesonde, is described which consists of a buoyancy driven platform with a recording package containing sensors for pressure, temperature, current speed, and current direction. The Cyclesonde makes repeated automatic round trips up and down a taut-wire, subsurface mooring while scanning these four parameters with a 26-s sampling interval. According to the adjustable vertical speed ranging between 2 and 20 cm s, a vertical resolution ranging between 0.5 and 5 m can be achieved. The usage of the Cyclesonde is presently limited to the upper 200 m in the ocean and a maximum of 300 cycles (600 profiles) during a 5.5-day period. Selected sequences of typical profiles of various parameters are presented. (Author) (U)

AD-A000 428 8/3 20/4
DEFENSE MAPPING AGENCY AEROSPACE CENTER ST LOUIS AIR FORCE STATION MO TECHNICAL TRANSLATION SECTION

Hydrodynamic Models of Tidal Motions at Sea, (U)

SEP 74 266P Kagan,B. A. ;
REPT. NO. DMAAC-TC-2028

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Technical trans. of mono. Gidrodinamicheskie Modeli Prilivnykh Dvizhenii v More, Leningrad, 1968 220p, by George Synenko, Henry Tomas, and Walter Burton.

DESCRIPTORS: *Tidal currents, *Hydrodynamics, *Ocean tides, Motion, Friction, Shallow water, Turbulent flow, Mathematical models, Translations, USSR (U)

;Contents: Methods of computing tidal oscillations of level and velocities of tidal current averaged over the vertical at sea;The turbulent boundary layer in the tidal current; Models of the vertical structure of the boundary layer in the tidal current; Three-dimensional models of tidal motions in a homogeneous sea; Effect of density inhomogeneities on tidal motions at sea; Tides in an ice-covered sea. (U)

AD-A000 278 20/4 8/3
JOHNS HOPKINS UNIV BALTIMORE MD

Lectures on Turbulence and Mixing Processes in Stratified Fluids. (U)

DESCRIPTIVE NOTE: Technical rept.,
OCT 74 141P Long,Robert R. ;
REPT. NO. TR-6-Ser-C
CONTRACT: N00014-67-A-0163-0013
PROJ: NR-061-198

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *Fluid flow, *Stratification, *Turbulence, *Oceanographic data, *Ocean currents, Fluid dynamics, Mixing, Viscosity index, Buoyancy, Mass transfer, Mathematical models, Coriolis effect, Estuaries, Air water interactions, Atmospheric motion, Wake, Upwelling, Baltic Sea, Meetings (U)
IDENTIFIERS: Richardson number, Salt transfer (U)

The report contains a set of notes based on a set of lectures for a summer course 'Vertical Exchange Processes in the Sea'. Topic 1 gives a background discussion of basic fluid mechanical problems and simple turbulence theory. Topic 2 discusses mixing in a stably stratified fluid. Topic 3 is concerned with the Richardson number, the flux Richardson number and eddy coefficients of viscosity and buoyancy together with a discussion of mass and salt transfers at the mouth of an estuary and a determination of the depth of the halocline in an estuary. Topic 4 contains a discussion of the surface layer of the atmosphere. Topic 5 discusses density currents and wake collapse. Topic 6 involves problems in which the earth's rotation is important. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOMO7

AD- 908 361 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY SAN DIEGO CALIF MARINE PHYSICAL LAB

A Study of the Thermal Boundary Layer of the Ocean. (U)

DESCRIPTIVE NOTE: Technical rept.,
FEB 73 10P Spiess,Fred N. ;Foster, Theodore D. ;Rearwin,Stephen ;
CONTRACT: N00014-69-A-0200-6041, ARPA-Order-2153

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN CURRENTS, PACIFIC OCEAN), (*THERMOCLINES, BOUNDARY LAYER), THERMAL ANALYSIS, DIURNAL VARIATIONS, SEA WATER, SURFACE TEMPERATURE, RADIOMETERS, THERMISTORS, MARINE METEOROLOGY, ATMOSPHERIC TEMPERATURE, WIND (U)
IDENTIFIERS: AIR WATER INTERACTIONS (U)

A two-wavelength radiometer and its new computerized data-acquisition/-logging system were installed on the Naval Undersea Center's Oceanographic Research Tower off the coast of San Diego. Data were taken on 14 days during a 6-week period. Meteorological sensors were installed to measure air temperature, dew point, wind speed, bulk-water temperature and net radiative heat flux. A voltage input corresponding to the wind direction was provided and outputs from a 31-element thermistor chain located directly beneath the sea surface in the radiometer's field of view were supplied. Another thermistor chain was mounted in the same location by N.U.C., who digitized and recorded their chain's output. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 890 557 8/6 8/2
AERONAUTICAL CHART AND INFORMATION CENTER ST LOUIS MO
TECHNICAL TRANSLATION SECTION

On the Boundaries of Oceans and Their Adjacent Seas (Ueber Grenzen der Ozeane und ihrer Nebenmeere). (U)

NOV 71 44P Schuetzler,Albrecht ;
REPT. NO. ACIC-TC-1768

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. of Petermanns Geographische Mitteilungen (East Germany) v114 p309-317 1970, by Sharon Wahrenburg. Includes envelope containing a chart of Oceans and Seas.

DESCRIPTORS: (*GEOGRAPHY, *OCEANS), CLASSIFICATION, NATURAL RESOURCES, MEASUREMENT, OCEAN BOTTOM TOPOGRAPHY, DEPTH FINDING, IDENTIFICATION, PERIODIC VARIATIONS, EAST GERMANY, MAPS, COASTAL REGIONS, BEACHES (U)
IDENTIFIERS: TRANSLATIONS (U)

The delimitation of oceans and seas can proceed from various aspects according to the use intended. To do this, characteristic oceanographic, biological or meteorological factors may be cited. For ocean and sea boundaries from the nautical-scientific aspects of breakdown and nomenclature, the morphological configuration of the sea bottom is taken into consideration. The article provides a historical survey of the essential stages of the subdivision of the global sea and explains the breakdown, boundaries and names on the world chart 'Names and Nautical Boundaries of the Oceans and Seas' (1969) published by the Seehydrographischer Dienst der DDR. On this chart are portrayed four oceans with 128 secondary seas. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 890 286 8/3 20/1
SACLANT ASW RESEARCH CENTRE LA SPEZIA (ITALY)

Shipborne Wave-Recorder Measurements of Surface Waves during Acoustic Experiments in the Western Ligurian Sea (ACOC-1). (U)

DESCRIPTIVE NOTE: Technical memo.,
OCT 71 25P Briscoe,Melbourne G. ;
REPT. NO. SACLANTCEN-TM-172

UNCLASSIFIED REPORT

DESCRIPTORS: (*HYDROGRAPHIC SURVEYING, RECORDING SYSTEMS), (*OCEAN WAVES, MEASUREMENT), ACOUSTIC EQUIPMENT, SHIPBOARD, SURFACE ROUGHNESS, WIND, UNDERWATER SOUND SIGNALS, REFLECTION, OCEANOGRAPHIC SHIPS, MEDITERRANEAN SEA, DATA PROCESSING, MAGNETIC TAPE, PROGRAMMING LANGUAGES, STATISTICAL ANALYSIS, POWER SPECTRA (U)
IDENTIFIERS: FORTRAN, LIGURIAN SEA, SEA STATES, STATISTICAL FILTERING (U)

Waves were measured south of Monaco in February 1970. The data for the main experiment days of 12 and 17 February were analysed by a simple analysis technique to yield significant wave heights and periods; hourly wave spectra were also calculated for the 17 February data. On 12 February, when the winds were 5 knots or less throughout the day, the standard deviation of the surface displacements was 0.14 m during the morning and 0.11 m in the afternoon; average zero-upcrossing periods were 6.8 seconds changing to 7.6 seconds during the day. On 17 February, when conditions were slightly rougher, the winds were 10 knots in the morning growing to 35 knots by late afternoon, but strong fetch limitations held the standard deviation of surface displacements to 0.25 m; the average zero-upcrossing period was about 7.8 seconds. In terms of properly defined 'sea state' (World Meteorological Organization Code 3700) the conditions were SS 2 on 12 February and SS 3 on 17 February. Incorrect but common sea state estimates based on wind force instead of wave height would have been SS 0 and AA 3-4. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 882 006 4/2 8/10
SACLANT ASW RESEARCH CENTRE LA SPEZIA (ITALY)

Synoptic Oceanographic and Meteorological Measurements Near OWS JULIET in the Eastern North Atlantic in July 1966 (MILOC 66, Phase D). (U)

DESCRIPTIVE NOTE: Technical rept., DEC 70 137P Dahme,Adolf ;
REPT. NO. SACLANTCEN-TR-180

UNCLASSIFIED REPORT

DESCRIPTORS: (*MARINE METEOROLOGY, ATLANTIC OCEAN), (*OCEANOGRAPHIC DATA, ATLANTIC OCEAN), METEOROLOGICAL PHENOMENA, SEA WATER, TEMPERATURE, WEATHER STATIONS, OCEANOGRAPHIC SHIPS, DEPTH FINDING, CLOUD COVER, DEW POINT, ATMOSPHERIC TEMPERATURE, HUMIDITY, CLOUDS, BAROMETRIC PRESSURE, WIND, VISIBILITY, THERMOCLINES, BATHYTHERMOGRAPH DATA, TABLES(DATA) (U)
IDENTIFIERS: EASTERN ATLANTIC OCEAN, MILOC 66 OPERATION, NORTH ATLANTIC OCEAN, SUMMER (U)

A special feature of MILOC 66 was an area survey (Phase D) of a 100 n.mi radius circle around the Ocean Weather Station (OWS) JULIET (position: 52 deg 30 min N, 20 deg W). The participating ships sailed on courses that formed approximate radii of the circle and were close enough to each other to allow them to maintain radar contact. During the survey the ships measured the temperature structure down to about 200 m by lowering mechanical bathythermographs (BTs) at preset times. In addition, routine meteorological data were taken with each BT dip and the surface current were measured every two hours. The bathymetry was continuously recorded by all ships throughout the survey. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 879 591 8/10
SACLANT ASW RESEARCH CENTRE LA SPEZIA (ITALY)

Bathymetry of the North Atlantic in the Area Bounded by 51 deg N - 54 deg N and 17 deg W - 22 deg W. (U)

DESCRIPTIVE NOTE: Technical memo., DEC 70 14P Dahme,Adolf ;
REPT. NO. SACLANTCEN-TM-160

UNCLASSIFIED REPORT

DESCRIPTORS: (*BATHYTHERMOGRAPH DATA, ATLANTIC OCEAN), OCEAN BOTTOM TOPOGRAPHY, MAPS, MAPPING (U)
IDENTIFIERS: MILOC SURVEYS, NORTH ATLANTIC OCEAN (U)

The bathymetric data collected during MILOC surveys of 1964, 1965 and 1966 conducted in the vicinity of Ocean Weather Station JULIET have been combined in a bathymetric chart of the area. (U)

AD- 879 590 8/10 20/1
SACLANT ASW RESEARCH CENTRE LA SPEZIA (ITALY)

Bathymetry and Bottom Structure of Zones Near the Island of Elba Used for Acoustical Trials in Shallow Water. (U)

DESCRIPTIVE NOTE: Technical memo., DEC 70 32P Akal,Tuncay ;
REPT. NO. SACLANTCEN-TM-162

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN BOTTOM, MEDITERRANEAN SEA ISLANDS), SHALLOW WATER, ACOUSTIC PROPERTIES, REFLECTIVITY, SOUND TRANSMISSION, UNDERWATER SOUND, CLAY, SAND, DEPOSITS, SEDIMENTATION, REVERBERATION, POROSITY, MAPS, OCEAN BOTTOM TOPOGRAPHY, OCEAN BOTTOM SAMPLING, DEPTH FINDING, ECHO RANGING (U)
IDENTIFIERS: ELBA ISLAND, SUBMARINE VALLEYS, TYRRHENIAN SEA (U)

Two shallow-water zones situated north and south-east of the Island of Elba have been surveyed to obtain information about the bottom conditions. The area to the north of the island has a depth of 100 m to 130 m and a very flat bottom covered with clay and sand-clay sediments. The area to the south-east of the island is of the same depth and has a flat bottom covered with clay sediments. In this area a very strong acoustic reflector exists under the sedimentary layer. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 879 586 8/3
SACLANT ASW RESEARCH CENTRE LA SPEZIA (ITALY)

A Fortran Computer Program for the Analysis of Some Simple Characteristics of Sea-Surface Waves. (U)

DESCRIPTIVE NOTE: Technical memo., JAN 71 23P Briscoe,Melbourne G. ;
REPT. NO. SACLANTCEN-TM-163

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN WAVES, SURFACE ROUGHNESS), POWER SPECTRA, COMPUTER PROGRAMS, HEIGHT FINDING, PROGRAMMING LANGUAGES, PHYSICAL PROPERTIES, MATHEMATICAL PREDICTION, ACCURACY (U)
IDENTIFIERS: FORTRAN, SEA LEVEL (U)

This memorandum, which is based on equations and ideas coming mostly from the National Institute of Oceanography of the United Kingdom, describes a FORTRAN program to calculate the rms displacement of the sea surface from the mean sea level, the average zero-crossing period of the random surface, and some quantities related to the spectral width. The input requires the following four quantities coming from a ten-minute record of surface height as a function of time at a point: the number of positive zero-crossings, the number of positive crests, the largest crest, and the largest trough. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 876 824 20/1 8/10
SACLANT ASW RESEARCH CENTRE LA SPEZIA (ITALY)

The Relationship Between Those Physical Properties of Underwater Sediments that Affect Bottom Reflection. (U)

DESCRIPTIVE NOTE: Technical rept.,
OCT 70 35P Akal,Tuncay ;
REPT. NO. SACLANTCEN-TR-177

UNCLASSIFIED REPORT

DESCRIPTORS: (*SOUND TRANSMISSION, OCEAN BOTTOM), (*SEDIMENTARY ROCK, OCEAN BOTTOM SAMPLING), DEPOSITS, REFLECTIVITY, DENSITY, POROSITY, REFRACTION, VELOCITY, COMPRESSIVE PROPERTIES, INTERFACES, OCEAN BOTTOM TOPOGRAPHY, STATISTICAL DATA, ATTENUATION, PREDICTIONS, ATLANTIC OCEAN, PACIFIC OCEAN, NORWEGIAN SEA, MEDITERRANEAN SEA, BLACK SEA, HARBORS (U)
IDENTIFIERS: *SEDIMENTS, SUBMARINE PLAINS, Most project-3 (U)

Over the last few years very many cores have been taken from various parts of the ocean bottom, ranging from harbours to abyssal plains. This study presents the relationship between those physical properties of the sediments that affect bottom reflection, by using the data from more than 400 cores taken from various physiographic regions of the Pacific and Atlantic Oceans and the Norwegian, Mediterranean and Black Seas. The compressional sound velocities and densities measured in the cores and the Rayleigh reflection coefficients computed from these values are discussed with respect to their dependence on porosity. It is found that density and reflection coefficients can be related to porosity by a simple linear equation, and sound velocity by a second-order polynomial equation. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 876 823 8/10
SACLANT ASW RESEARCH CENTRE LA SPEZIA (ITALY)

Bathymetric and Oceanographic Survey of the Santa Lucia Bank (A Small Seamount in the Ligurian Sea). (U)

DESCRIPTIVE NOTE: Technical memo.,
OCT 70 24P Shonting,David H. ;
Bartolini,Carlo ;Tognarini,Giuliano ;
REPT. NO. SACLANTCEN-TM-157

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN BOTTOM TOPOGRAPHY, MEDITERRANEAN SEA), DEPTH FINDING, ECHO RANGING, BATHYTHERMOGRAPH DATA, MARINE GEOLOGY, HYDROGRAPHIC SURVEYING, OCEAN CURRENTS, OCEAN BOTTOM SAMPLING, ITALY, SEA WATER, SALINITY, UNDERWATER SOUND, SCATTERING, FISHES (U)
IDENTIFIERS: LIGURIAN SEA, NATO, SANTA LUCIA SEAMOUNT, SEAMOUNTS, Most project-1 (U)

A bathymetric and oceanographic survey was made of the Santa Lucia Bank, a small seamount in the northeastern Ligurian Sea having a minimum depth of 125-130 m. A three-day observation of currents at its crest shows a steady average flow of about 23 cm/s to the west and west-south-west. Analysis of a grab sample of the debris on the bank showed that it was apparently the product of beach erosion and that the seamount had been uncovered within the past 7-8 million years. Many fish, observed on the echo sounder as strong individual and collective scatterers, were generally present around the crest of the seamount. The Bank appears to have valuable potential as a submerged platform near La Spezia on which to anchor ships and buoys to make sea/air interaction, oceanographic, and acoustic observations. (Author) (U)

AD- 875 681 8/3
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Preliminary Report on the Numerical Prediction of Tides and Tidal Currents for Various Wind Conditions in the South China Sea. (U)

DESCRIPTIVE NOTE: Informal rept., JUL 70 70P Lazanoff,Sheldon M. ;Clark, Dennis K. ;
REPT. NO. NOO-IR-70-41
PROJ: NOO-773-TN-SAK

UNCLASSIFIED REPORT

DESCRIPTORS: (*TIDES, *SOUTH CHINA SEA), MATHEMATICAL MODELS, MATHEMATICAL PREDICTION, NUMERICAL ANALYSIS, WIND (U)
IDENTIFIERS: GRAPHS(CHARTS), TIDAL CYCLES, *TIDAL CURRENTS (U)

A modified version of Professor W. Hansen's (1966) numerical hydrodynamical prediction model is used to predict typical tide and tidal current variations in the South China Sea for five different wind fields. Cotidal charts constructed from the sum of the major partial tides are presented for higher high and lower low water. The model, basic assumptions and boundary conditions are presented. No statistical evaluation of the model results can be made because of the lack of actual data. However, based on the excellent results obtained with this model for the North Sea and the good correlation with existing South China Sea data, it is believed that these results are superior in detail and accuracy to existing interpretations of the area. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 875 029 8/12 8/10
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

BIRDS EYE 8-69, 17 November-3 December 1969. (U)

DESCRIPTIVE NOTE: Informal rept., JUN 70 113P Agee,H. J. ;Freeman,R. F. ;
REPT. NO. NOO-IR-70-39

UNCLASSIFIED REPORT

DESCRIPTORS: (*SEA ICE, *ARCTIC OCEAN), (*AERIAL RECONNAISSANCE, SEA ICE), FREEZING MELTING, ICE ISLANDS, SEA WATER, OBSERVATION AIRCRAFT, FLIGHT PATHS, RADAR REFLECTIONS, THICKNESS, WEATHER FORECASTING, MAPS, GREENLAND SEA, DENMARK, STRAITS, BAFFIN ISLAND, BAYS, POLAR REGIONS (U)
IDENTIFIERS: AN/AMQ-17, BIRDS EYE 8 1969 PROJECT, FLETCHERS ICE ISLAND (U)

Birds Eye 8-69 was a regularly scheduled Arctic Ocean ice reconnaissance mission covering the North American sector of the Arctic Basin, including the Greenland Sea, Denmark Strait and Baffin Bay between 17 November and 3 December 1969. Ice observations were taken under twilight or moonlight conditions except southeast of Greenland. Adverse weather and/or illumination limited ice observing in certain areas. The ice edge in the Greenland Sea and Denmark Strait was located south of its normal position. Two isolated giant floes or possible ice islands were located northwest of Alaska. Ice Island T-3 was located at (85 deg 28 min) N, 120 degrees W. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 872 683 8/10 20/1
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Oceanographic Cruise Summary Mid-Latitude Transit of the North Pacific Ocean by the USNS CHARLES H. DAVIS (T-AGOR 5) October 1969. (U)

DESCRIPTIVE NOTE: Informal rept., APR 70 26P Carlson,Quick ;
REPT. NO. NOO-IR-70-26

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEANOGRAPHIC DATA, PACIFIC OCEAN), (*UNDERWATER SOUND, SOUND TRANSMISSION), HYDROGRAPHIC SURVEYING, OCEANOGRAPHIC SHIPS, OXYGEN, SEA WATER, SAMPLING, DETECTORS, SAMPLERS, SCATTERING, MARINE BIOLOGY, BATHYTHERMOGRAPH DATA, MAGNETIC ANOMALY DETECTION, OCEAN BOTTOM, DATA PROCESSING (U)
IDENTIFIERS: AGOR 5 VESSEL, NAVIGATION TRACKS (U)

The report contains a summary of oceanographic data obtained during the October 1969 transit of the Pacific Ocean by the USNS CHARLES H. DAVIS (T-AGOR 5). Sound velocity and oxygen sections are presented for the transit. A comparison of the sound velocity section with one taken along the same track by the USS REHOBOTH (AGS 50) in March 1968 shows remarkable similarity except near the surface where the March 1968 section shows better mixing. A new oxygen sensor, the Beckman Instruments, Inc. Minos dissolved Oxygen monitor, was used to measure oxygen content. Comparisons were made between the Oxygen sensor and Microwinkler oxygen methods from data obtained on the USNS LYNCH (T-AGOR 7) in January 1970. Of 211 water samples taken at seven stations, 91% of the data points agreed within plus or minus 0.3 ml/L, 81% agreed within plus or minus 0.2 ml/L, and 68% agreed within plus or minus 0.1 ml/L. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 872 277 8/10
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Oceanographic Cruise Summary, Kane Basin, September 1969. (U)

DESCRIPTIVE NOTE: Informal rept., MAY 70 21P Kravitz,Joseph H. ;Sorensen, Fredrick H. ;
REPT. NO. NOO-IR-70-29
PROJ: NOO-102-04

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN BOTTOM TOPOGRAPHY, ARCTIC OCEAN), SEDIMENTATION, BATHYTHERMOGRAPH DATA, OCEAN BOTTOM SAMPLING, ROCK (U)
IDENTIFIERS: KANE BASIN, NARES STRAIT (U)

The Naval Oceanographic Office (NAVOCEANO) conducted a bottom survey of the Kane Basin during September 1969 aboard USCGC SOUTHWIND (WAGB 280). The primary purpose of the survey was to obtain data on the composition and configuration of the Basin floor. NAVOCEANO operations included core and grab sampling at 47 stations, 9 camera lowerings, and over 1,000 miles of bathymetric soundings. A Coast Guard Oceanographic Unit made temperature, salinity, and oxygen measurements at 19 Nansen cast stations. (Author) (U)

AD- 868 908 8/1
OFFICE OF NAVAL RESEARCH LONDON (ENGLAND)

Romania Revisited, (U)

MAR 70 13P Costlow,John D. , Jr;
REPT. NO. ONRL-R-20-70

UNCLASSIFIED REPORT

DESCRIPTORS: (*MARINE BIOLOGY, BLACK SEA), SCIENTIFIC RESEARCH, ECOLOGY, PLANKTON, PROTOZOA, DELTAS, RADIOBIOLOGY (U)
IDENTIFIERS: DANUBE DELTA (U)

The report discusses current research in some marine facilities in Romania and describes facilities. In effect, it updates the report 'Marine Sciences in Romania' ONRL 7-67 (AD-808 471). It also contains a bibliography of publications by Romanian marine biologists since 1965. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 787 827 8/3
HAWAII INST OF GEOPHYSICS HONOLULU

The Dynamic Topography of the Pacific Ocean and Its Fluctuations, (U)

AUG 74 61P Wyrtki,Klaus ;
REPT. NO. HIG-74-5
CONTRACT: N00014-67-A-0387-0017

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Sponsored in part by National Science Foundation, Washington, D.C.

DESCRIPTORS: *Ocean currents, *Ocean surface, *Pacific Ocean, Topography, Seasonal variations, Topographic maps, Charts, Height finding, Eddy currents (U)

The dynamic topography of the Pacific Ocean has been mapped for bimonthly periods relative to 500 and 1000 decibars and based on approximately 66,600 hydrographic stations. The maps indicate that the largest seasonal fluctuations are associated with the equatorial current systems. In the subtropical gyres and in higher latitudes, dynamic topography varies seasonally in accordance with the annual cycle of surface layer temperature, but the pattern of isobars does not change much between summer and winter. In the western portion of the North Pacific anticyclonic gyre, a U-shaped ridge is developed, separating the western boundary current from the interior of the gyre and linking the north equatorial ridge with a ridge at the right flank of the Kuroshio. (Modified author abstract) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOMO7

AD- 787 773 8/10
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

Some Physical and Chemical Properties of the Gulf of Corinth. (U)

DESCRIPTIVE NOTE: Technical rept.,
MAR 73 10P Anderson,James J. ;Carmack, Eddy C. ;
REPT. NO. TR-310, Contrib-731
CONTRACT: N00014-67-A-0103-0014, NSF-GA-24875
PROJ: NR-083-012

UNCLASSIFIED REPORT
Availability: Pub. in Estuarine and Coastal Marine Science, v1 p195-202 1973.
SUPPLEMENTARY NOTE:

DESCRIPTORS: *Oceanographic data, Mediterranean Sea, Cooling, Winter, Sea water, Deep water, Temperature, Salinity, Oxygen (U)
IDENTIFIERS: *Corinth Gulf, Ionian Sea (U)

The Gulf of Corinth is a silled embayment opening into the Ionian Sea on the west and through the Corinth Canal to the Aegean Sea on the east. Winter cooling of the nearshore waters results in convective overturn and renewal of the deep water of the basin. Renewal at the intermediate depths occurs when Ionian Sea water enters the basin over the sill. The basin acts as a slight nutrient trap. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOMO7

AD- 787 772 8/7 8/10
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

Geology of the Strait of Juan de Fuca. (U)

DESCRIPTIVE NOTE: Technical rept.,
MAR 73 31P Mayers,Ian R. ;Bennett,Lee C. , Jr;
REPT. NO. TR-309, Contrib-725
CONTRACT: N00014-67-A-0103-0014, Nonr-477(37)
PROJ: NR-083-012

UNCLASSIFIED REPORT
Availability: Pub. in Marine Geology, v15 p89-117 1973.
SUPPLEMENTARY NOTE: Sponsored in part by Grant NSF-GU-2655.

DESCRIPTORS: *Juan de Fuca Strait, *Oceanographic data, Seismic reflection, Stratigraphy, Tectonics, Bathymetry, Sedimentation (U)
IDENTIFIERS: Pleistocene epoch (U)

The results of interpretation and mapping of this project have been combined with previously published information in an attempt to synthesize the geology of the Straits of Juan de Fuca. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 787 766 8/10
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

A Compilation of Articles Reporting Research Sponsored by the Office of Naval Research. (U)

MAY 74 126P
REPT. NO. TR-304, TR-305
CONTRACT: N00014-67-A-0103-0014, Nonr-477(37)
PROJ: NR-083-012

UNCLASSIFIED REPORT
Availability: Pub. in various Jnls.
SUPPLEMENTARY NOTE: Also includes Rept. nos. TR-306 thru TR-310. See also AD-787 758.

DESCRIPTORS: *Oceanographic data, Radiolaria, Temperature, Salinity, Sound transmission, Japan, Ocean ridges, Silicates, Arctic Ocean, Africa, Juan de Fuca Strait (U)
IDENTIFIERS: Corinth Gulf (U)

;Contents: Radiolaria: leg 19 of the deep-sea drilling project; Bispectra and cross-bispectra of temperature, salinity, sound velocity and density fluctuations with depth off northeastern Japan; On the thermal balance of a mid-ocean ridge; A reactive silicate budget for the Arctic Ocean; Silicate water mass analysis off the N.W. coast of Africa; Geology of the Strait of Juan de Fuca; Some physical and chemical properties of the Gulf of Corinth. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 787 758 8/1 8/3 8/10
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

A Compilation of Articles Reporting Research Sponsored by the Office of Naval Research. (U)

APR 74 107P
REPT. NO. TR-296, TR-297
CONTRACT: N00014-67-A-0103-0014, Nonr-477(37)
PROJ: NR-083-012

UNCLASSIFIED REPORT
Availability: Pub. in various Jnls.
SUPPLEMENTARY NOTE: Also includes Rept. nos. TR-298 thru TR-303. See also AD-787 766.

DESCRIPTORS: *Oceanography, Oceanographic data, Reports, Convection, Salts, Marine biology, North Pacific Ocean, Naval research, Oxygen, Nitrates, Arctic Ocean, Paleontology, Salinity, Aquatic plants, Japan (U)
IDENTIFIERS: Silicoflagellata (U)

;Contents: Thermohaline structure and baroclinic flow across the Gulf of California entrance and in the Revilla Gigedo Island Region; Radiolaria and silicoflagellates from the Hayama Group, Kanagawa Prefecture, Japan; Polycystine radiolaria from surface sediments of the Northern Tasman Sea; Oxygen deficient conditions and nitrate reduction in the Eastern Tropical North Pacific Ocean; Temperature and salinity fronts at the boundaries of the subarctic-subtropical transition zone in the Western Pacific; Acoustic stratigraphy, structure, and history of quaternary deposition in Cascadia Basin; Late cretaceous silicoflagellates from the Alpha Cordillera of the Arctic Ocean; Silicoflagellates and ebridians from leg 19. (U)

AD- 787 757 8/1
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

Primary Productivity Studies Using Merchant Vessels in the North Pacific Ocean. (U)

DESCRIPTIVE NOTE: Technical rept., 74 10P Anderson,George C. ;Munson, Robert E. ;
REPT. NO. TR-295, Contrib-624
CONTRACT: N00014-67-A-0103-0014, Nonr-477(37)
PROJ: NR-083-012

UNCLASSIFIED REPORT
Availability: Pub. in Biological Oceanography of the Northern North Pacific Ocean, p245-251 1972.
SUPPLEMENTARY NOTE:

DESCRIPTORS: *Marine biology, *North Pacific Ocean, Merchant vessels, Temperature, Distribution, Oceanographic data, Isolation, Chlorophylls, Subarctic regions (U)
IDENTIFIERS: *Primary biological productivity, *Nutrients (U)

A description is given of the distribution of temperature, isolation, plant nutrients, chlorophyll, and primary productivity during the spring months in the Subartic North Pacific Ocean.
(Modified author abstract) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOMO7

AD- 787 751 8/1 8/3 8/10
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

A Compilation of Articles Reporting Research Sponsored by the Office of Naval Research. (U)

DEC 73 164P
REPT. NO. TR-290, TR-291
CONTRACT: N00014-67-A-0103-0014, Nonr-477(37)
PROJ: NR-083-012

UNCLASSIFIED REPORT
Availability: Pub. in Various Jnls.
SUPPLEMENTARY NOTE: Also includes Rept. nos. TR-292 thru TR-295. See also AD-728 866.

DESCRIPTORS: *Oceanography, Oceanographic data, Birds, Reports, Marine biology, Plankton, Pacific Ocean, Mexico, Paleontology (U)

;Contents: Report on the second planktonic conference; On the vertical distribution of zooplankton in relation to chlorophyll concentration; Preliminary standing stock and biomass estimates of seabirds in the subarctic Pacific region; Large-scale upwelling off northwestern Mexico; Upper cretaceous and cenozoic silicoflagellates and ebridians; Primary productivity studies using merchant vessels in the North Pacific Ocean. (U)

AD- 787 723 4/2
NAVAL WEATHER SERVICE COMMAND WASHINGTON D C

Summary of Synoptic Meteorological Observations Caribbean and Nearby Island Coastal Marine Areas. Volume 1. Area 1 - British Honduras, Area 2 - Ciudad del Carmen, Area 3 - Veracruz, Area 4 Cape Rojo, Area 5 - Yucatan, Area 6 - Isle of Pines. (U)

NOV 74 484P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *Marine meteorology, *Coastal regions, *Caribbean Sea, Air water interactions, Climate, Atmospheric precipitation, Fog, Cloud cover, Visibility, Ocean waves, Atmospheric temperature, Tables(Data), Honduras, Mexico Gulf, Mexico (U)
IDENTIFIERS: Synoptic meteorology, British Honduras, Ciudad Del Carmen(Mexico), Veracruz(Mexico), Cape Rojo, Yucatan Peninsula (U)

The data contained in these tables were obtained from Tape Data Family 11 (TDF-11) Marine Surface Observations. The development and maintenance of TDF-11 was primarily funded by the Naval Weather Service Command. (U)

AD- 787 621 8/3
STORM WAVE DYNAMICS INC FORT LAUDERDALE FLA

Test and Evaluation of an Ocean Wave Data System. (U)

DESCRIPTIVE NOTE: Rept. no. 1 (Final), 1 Jan-15 Apr 73,
MAR 73 45P Richardson,Gordon ;McIntosh, Gregory S. ;Campbell,W. Graham ;
CONTRACT: N00014-73-C-0234

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *Ocean waves, *Buoys, Oceanographic data, Test methods, Static tests, Power spectra, Measurement, Correlation techniques, Malfunctions, Digital systems, Data acquisition (U)
IDENTIFIERS: Wave master buoys (U)

The Wavemaster Buoy, a free-drifting system for the in situ measurement and recording of ocean waves, incorporating the 'tuned sphere' stabilization concept and a precision accelerometer, was tested and evaluated. Static tests and two open-ocean sea trials were performed. Data was recorded by a second wave-measuring buoy, anchored at the test site. Recorded wave heights and periods varied from 1 to 5.8 meters and from 4.6 to 18.3 seconds. (Modified author abstract) (U)

AD- 787 570 8/10
WISCONSIN UNIV MADISON DEPT OF GEOLOGY AND GEOPHYSICS

Scattering and Reflection of Acoustic Waves at the Bottom and Surface of the Ocean. (U)

DESCRIPTIVE NOTE: Final rept. 1 Sep 68-Aug 74,
AUG 74 50P Clay,C. S. ;
REPT. NO. RR-74-1
CONTRACT: N00014-67-A-0128-0009
PROJ: NR-083-241

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *Ocean bottom topography, *Marine geophysics, *Underwater sound, *Echo ranging, Spain, Acoustic reflection, Acoustic scattering, Sonar echoes, Ocean bottom, Ocean surface (U)
IDENTIFIERS: Lake Superior, Most Project-2 (U)

Effect of roughness of the sea floor on marine geophysical measurements is studied. Comparisons of scattering experiments and theory, scattering characteristics of the sea floor, sonographs of ice grooves on the bottom of Lake Superior, and the roughness of the sea floor in the basin west of Spain are shown. (U)

AD- 787 567 8/10 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Cruise Report, ATLANTIS II 69. (U)

DESCRIPTIVE NOTE: Technical rept.,
JUL 74 32P Moller,Donald A. ;
REPT. NO. WHOI-74-48
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *Oceanographic data, *Mooring, *Buoys, Recovery, Maintenance, Marine engineering, Flowmeters, Temperature, Depth, Hydrography, North Atlantic Ocean (U)
IDENTIFIERS: Atlantis 2 Vessel (U)

A cruise aboard R/V ATLANTIS II was carried out from 22 August to 5 September, 1972, leaving from and returning to Woods Hole, MA. Work was carried out in the vicinity of Site D (39 deg 10 min N, 70 deg 00 min W). Five current-meter moorings were set and five recovered. One engineering mooring was aborted during an attempted deployment by faking box. Nineteen CTD's and twenty-three hydrographic stations were made. Two of the current-meter moorings were set 400 meters apart in a comparison of U.S. and U.S.S.R. current meters for SCOR Working Group 21. The cruise was broken by a stop in Woods Hole to take aboard additional anchors and by an overnight stay at Menemsha Bight, Martha's Vineyard to escape from bad weather. (Author) (U)

AD- 787 566 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Cruise Report, CHAIN 116, Jul 22 - August 10, 1974. (U)

DESCRIPTIVE NOTE: Technical rept.,
OCT 74 38P Heinmiller,Robert H. , Jr;
REPT. NO. WHOI-74-77
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *Oceanographic data, *Mooring, *Buoys, North Atlantic Ocean, Maintenance, Oceanographic ships, Networks, Underwater sound equipment, Recovery, Magnetometers, Thermal properties, Sea water, Salinity, Echo ranging, Bathythermographs (U)
IDENTIFIERS: Chain 116 vessel (U)

CHAIN 116 was a single-leg cruise by the Woods Hole Oceanographic Institution's Buoy Project, leaving Woods Hole on July 22 and returning August 10, 1974. Projects carried out on this cruise included the setting of nine moorings for the Polymode pilot array, recovery of three moorings set on previous cruises, hourly XBT's, thirty-three CTD's, three magnetometer emplacements, and continuous thermosalinograph and echo-sounding records. (Author) (U)

AD- 787 565 8/10 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Cruise Report CHAIN 103. (U)

DESCRIPTIVE NOTE: Technical rept.,
JUN 74 31P Moller,Donald A. ;
REPT. NO. WHOI-74-41
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *Oceanographic data, *Mooring, *Buoys, Ocean currents, Flowmeters, Deep water, Marine engineering, Recovery, Bathymetry, Temperature, Depth, Hydrography, North Atlantic Ocean (U)

A cruise was carried out aboard R/V CHAIN from 11 March to 26 March, 1972, leaving from and returning to Woods Hole, Massachusetts. Primary working areas were on the 70th meridian from 40 degrees N. to 28 degrees N. and in the MODE area around 28 degrees N., 68 deg 30 min W. Seven current-meter moorings were set and two others recovered. Two engineering moorings were set and one of them recovered. A detailed bathymetric survey was made of a section of the MODE area. Ten hydrographic and three CTD stations were taken. Six of the current-meter moorings comprised MODE-0, Array 3. (Author) (U)

AD- 787 564 8/10 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Cruise Report, ATLANTIS II 63. (U)

DESCRIPTIVE NOTE: Technical rept.,
JUN 74 39P Moller,Donald A. ;
REPT. NO. WHOI-74-43
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *Oceanographic data, *Mooring, *Buoys, Flowmeters, Maintenance, Underwater sound equipment, Recovery, Temperature, Depth, Floats, Hydrography, North Atlantic Ocean (U)
IDENTIFIERS: Atlantis 2 Vessel (U)

A cruise was carried out aboard R/V ATLANTIS II from October 21 to November 8, 1971 leaving from and returning to Woods Hole, MA. Work was carried out primarily along the 70th W. meridian to a latitude of 28 degrees N. Five current meter moorings were recovered and ten set. Two acoustic transponder moorings, associated with six acoustic dropsonde profiles were set and recovered. Twenty-six CTD stations and ten hydrographic stations were taken. A mooring which had previously failed due to submersion and crushing of its surface float was recovered through dragging. (Author) (U)

AD- 787 563 8/7 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Summary of Seismic Reflection, Refraction, Magnetic and Dredge Station Data Collected During a Geologic Study of the Gulf of Maine. (U)

DESCRIPTIVE NOTE: Technical rept.,
MAY 74 91P Ballard,Robert D. ;
REPT. NO. WHOI-74-30
CONTRACT: N00014-70-C-0205, N00014-73-C-0097
PROJ: NR-263-103, NR-265-107

UNCLASSIFIED REPORT

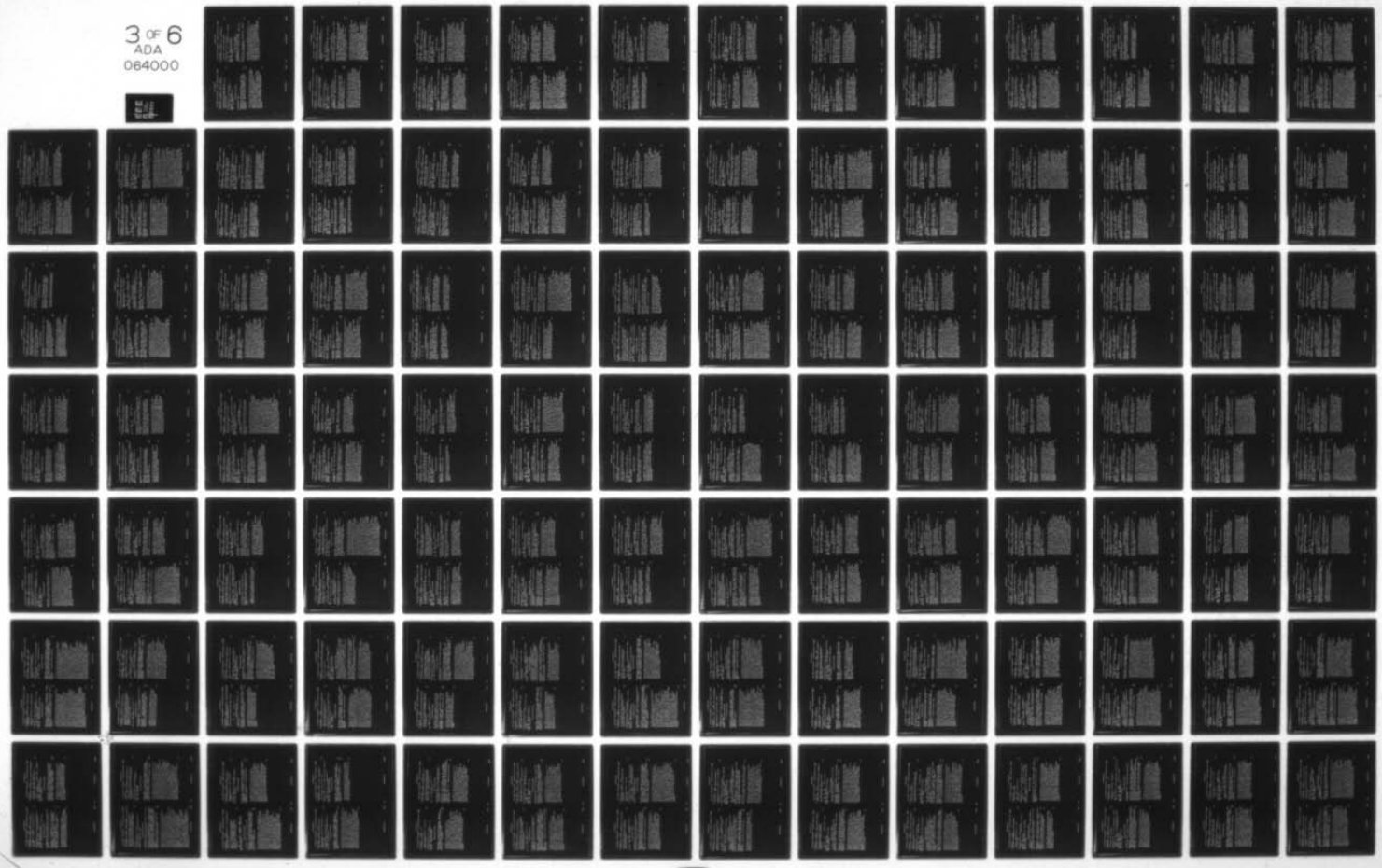
SUPPLEMENTARY NOTE: Sponsored in part by Grants NSF-GA-32454, and NSF-GD-32558.

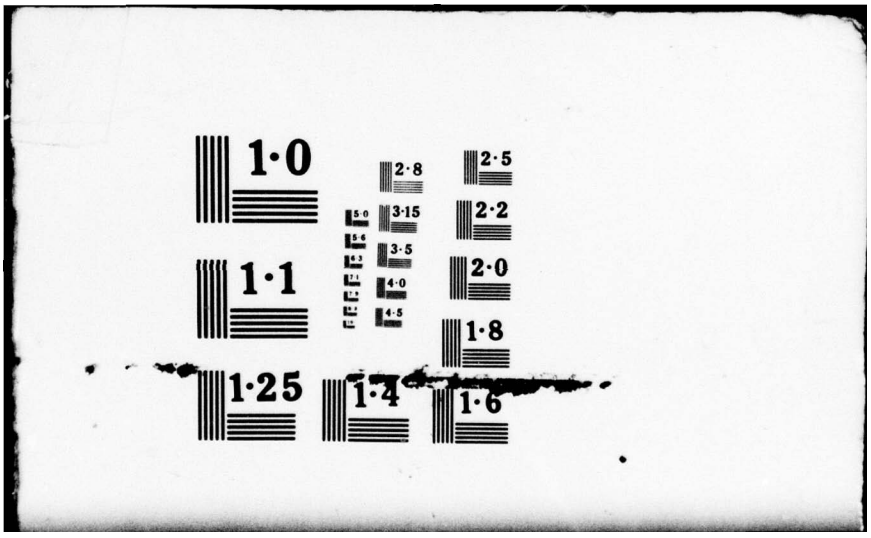
DESCRIPTORS: *Marine Gulf, *Tectonics, *Oceanographic data, Seismic reflection, Refraction, Echo ranging, Histograms, Profiles, Graphs, Charts (U)
IDENTIFIERS: Seismic refraction, Nantucket Island, Plate tectonics (U)

Detailed breakdown of geophysical cruises carried out in the Gulf of Maine are presented. Included are examples of individual seismic reflection profiles, a histogram, listing, and areal distribution of the refraction data; results of a refraction experiment conducted on Nantucket Island, and examples of sonobuoy records which were used to determine compressional wave velocities of various rock units within the Gulf of Maine. (Modified author abstract) (U)

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AD- 787 561 8/7 9/2 5/2
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

The Digital Data Library System: Library Storage and Retrieval of Digital Geophysical Data. (U)

DESCRIPTIVE NOTE: Technical rept., SEP 74 31P Groman,R. C. ;
REPT. NO. WHOI-74-68
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *Marine geophysics, *Information systems, *Earth sciences, *Oceanographic data, Information retrieval, Data management, FORTRAN (U)
IDENTIFIERS: SEARCH computer program, Sigma 7 computers (U)

The library storage and retrieval system described in this report will permit any computer user easy and quick access to the geophysical data that has been stored in digital form by the Department of Geology and Geophysics Digital Data Library. Retrieval by geographical area, by ship and cruise, or by time is possible. Numbered lists, profile plots, annotated and profiled data along ship's tracks on Mercator charts can be easily produced using this system. (Modified author abstract) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 787 384 8/10
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

Prospects in Chemical Oceanography. (U)

DESCRIPTIVE NOTE: Technical rept., AUG 73 4P Andersen,N. R. ;Richards, F. A. ;
REPT. NO. TR-316, Contrib-730
CONTRACT: N00014-67-A-0103-0014
PROJ: NR-083-012

UNCLASSIFIED REPORT

Availability: Pub. in Limnology and Oceanography, v18 n5 p815-817 1973.
SUPPLEMENTARY NOTE: Revision of report dated 29 Jun 73.

DESCRIPTORS: *Oceanography, *Geochemistry, *Marine biology, Workshops(Meetings) (U)

The present status of research in chemical oceanography and pressing problems and problem areas in the field were discussed at a workshop of American oceanographers, sponsored by the Ocean Science and Technology Division of the Office of Naval Research, held 11-15 December 1972, at Monterey, California. Topics discussed were the inorganic composition of seawater, marine geochemical fluxes, and impact of life process on the chemistry of the ocean and vice versa. (U)

AD- 787 379 8/10
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

Thermohaline Structure, Fronts, and Sea Air Energy Exchange of the Trade Wind Region East of Hawaii. (U)

DESCRIPTIVE NOTE: Technical rept., DEC 73 17P Roden,Gunnar I. ;
REPT. NO. TR-311
CONTRACT: N00014-67-A-0103-0014
PROJ: NR-083-012

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Physical Oceanography, v4 n2 p168-182 Apr 74.
SUPPLEMENTARY NOTE: Revision of report dated 10 Sep 73.

DESCRIPTORS: *Air water interactions, *Ocean surface, *North Pacific Ocean, Hawaii, Energy transfer, Wind shear, Heat flux, Salinity, Buoyancy, Oceanographic data (U)
IDENTIFIERS: *Thermohaline circulation (U)

The thermohaline structure, fronts, and sea-air energy exchange of the trade wind region east of Hawaii are investigated. The wind stress, heat, salt and buoyancy flux fields at the sea surface are evaluated on a 1 degree latitude-longitude grid and are related to the main thermohaline features of the upper ocean sampled meridionally at 36-km intervals. It is shown that there exists a close relation between the configuration of the above-mentioned fields and the meridional temperature and salinity structure. (Modified author abstract) (U)

AD- 787 378 8/10 8/3
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

A Compilation of Articles Reporting Research Sponsored by the Office of Naval Research. (U)

OCT 74 106P
REPT. NO. TR-311, TR-312
CONTRACT: N00014-67-A-0103-0014, Nonr-477(37)
PROJ: NR-083-012

UNCLASSIFIED REPORT
Availability: Pub. in various Jnls.
SUPPLEMENTARY NOTE: Also includes Rept. nos. TR-313 thru TR-319. See also AD-714 932.

DESCRIPTORS: *Oceanographic data, Wind shear, Heat flux, Salinity, Hawaii, Microstructure, Internal waves, Resonance, Friction, Greenland Sea, Deep water, Seasonal variations, Chemical properties, Basalt, Oceanic crust, Sedimentary rock, Velocity, Elastic properties (U)
IDENTIFIERS: Silicoflagellata, Ocean bottom spreading, Extrusive rocks (U)

;Contents: Thermohaline structure, fronts, and sea-air energy exchange of the trade wind region east of Hawaii; Surface microstructure of selected silicoflagellates; An experimental study of the resonant instability of an internal wave of mode 3 over a range of driving frequencies; Internal tides; The formation of bottom water in the Greenland Sea; Prospects in chemical oceanography; Progressive weathering of submarine basalt with age--further evidence of sea-floor spreading; Oceanic crustal basement--a comparison of seismic properties of D.S.D.P. basalts and consolidated sediments; Velocities and elastic moduli of volcanic and sedimentary rocks recovered on DSDP Leg 25. (U)

AD- 787 018 8/7 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Summary of the Geologic Dives Conducted in the Gulf of Maine During 1971 and 1972 by the Research Submersible ALVIN. (U)

DESCRIPTIVE NOTE: Technical rept.,
MAY 74 76P Ballard,Robert D. ;
REPT. NO. WHOI-74-29
CONTRACT: N00014-73-C-0097, N00014-71-C-0284
PROJ: NR-293-008, NR-265-107

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Sponsored in part by NSF-GA-32454, NSF-GD-32558.

DESCRIPTORS: *Maine Gulf, *Ocean bottom sampling, Ocean bottom topography, Seismic reflection, Profiles, Tectonics, Geological survey, Transponders, Photogeology, Echo ranging (U)
IDENTIFIERS: Alvin vessel, Manned submersibles, *Hydrogeology, Seismic refraction, Rock tests, Rock properties (U)

A detailed summary of geologic dives made by the submersible ALVIN in the Gulf of Maine is presented. Report includes sampling procedures followed by the submersible a listing and areal distribution of the samples collected, a comparison of the submersible to other sampling techniques, and the relationship of individual pilots to sampling success. Each dive is described in detail including representative bottom photographs and artist's concepts of outcrop regions. (Modified author abstract) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOMO7

AD- 786 746 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Column Strength Spectra Measured during Three Cruises in the North Atlantic and Mediterranean. (U)

DESCRIPTIVE NOTE: Technical rept.,
SEP 74 53P McElroy,Paul T. ;
REPT. NO. WHOI-74-65
CONTRACT: N00014-70-C-0205
PROJ: NR-263-103

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *Sea water, *Acoustic properties, *North Atlantic Ocean, *Mediterranean Sea, Tables(Data), Oceanographic data (U)

Volume reverberation measurements were made at 85 stations in three cruises in the North Atlantic and Mediterranean. Broadband measurements were made using 1/2-lb. blocks of TNT as sound sources, and the data were analyzed using 1/3-octave filters in the range 1.0 to 31.5 kHz to give column strength values. There are plots of the column strength spectra and maps of the station positions. Tables give spectral values for each station, as well as position, date, water depth, and environmental information. There is a short discussion of how the spectra were determined as well as possible ways to interpret spectra once they are measured. (Modified author abstract) (U)

AD- 786 136 8/10 8/3 8/7
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Oceanographic Survey Report, Sea of Japan. (U)

DESCRIPTIVE NOTE: Special pub. (Final) for Oct 67-Jun 68.
MAY 74 221P
REPT. NO. N00-SP-133-18-1

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Japan Sea, Ocean currents, Marine geophysics, Bathymetry, Oceanographic ships, Marine geology, Salinity, Underwater sound, Thermoclines, Echo ranging, Temperature, Geomagnetism, Sediments, Deep water, Surface waters, Korea (U)
IDENTIFIERS: Japan Basin, Tartar Trough, Yamato Ridge (U)

A geological/geophysical and oceanographic survey was conducted in the Sea of Japan from October 1967 to June 1968 aboard the USNS SILAS BENT and the R/V F. V. HUNT. Dominant physiographic features of the sea are: Japan Basin (including Japan Abyssal Plain), Tatar Trough, Yamato Ridge, Korea Continental Borderland, and the continental slope. Three major stratigraphic units were recognized in the seismic profiles: (1) basement, (2) folded, faulted, and discontinuous sediments overlying basement, and (3) flat uppermost sediments. Most of the cored sediments were in the fine-silt to clay range; however, Japan Abyssal Plain had coarsed-textured turbidities. Large seasonal changes in surface water properties were observed. An extensive list of references is included in the report. (Modified author abstract) (U)

AD- 786 012 8/10 8/3 8/1
SACLANT ASW RESEARCH CENTRE LA SPEZIA (ITALY)

Oceanographic Summary of the Barents Sea South of Bear Island in the Summer. (U)

DESCRIPTIVE NOTE: Memorandum rept.,
SEP 74 19P Foster,Leslie A. ;
Johannessen,Ola M. ;Isoppo,Cinzia ;
REPT. NO. SACLANTCEN-SM-52

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Barents Sea, Bathymetry, Summer, Temperature, Salinity, Underwater sound signals, Acoustic velocity, Isotherms, Ocean currents, Thermoclines, Arctic regions, Fisheries, Polar regions (U)
IDENTIFIERS: Bear Island, International Council for the Exploration of the Sea (U)

Using published articles, data reports and other historical data, a brief summary of the oceanography of the region between Bear Island and Norway is presented. The main feature of this area is a frontal region formed where the warm Atlantic water and cold Polar water meet; steep temperature, salinity and sound speed gradients occur in this region. The position of the front can vary by about 30 nautical miles from year to year. (Author) (U)

AD- 785 905 8/10 8/1 8/3 8/14
OFFICE OF NAVAL RESEARCH ARLINGTON VA

Report Availability Notice, Summer 1974, (U)

74 311P Kielhorn,William V. ;
REPT. NO. ONR-ACR-199

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated 1973, AD-770 451.

DESCRIPTORS: *Oceanographic data, *Abstracts, *Naval research, Sea water, Ocean bottom topography, Marine biology, Underwater sound, Marine geophysics, Air water interactions, Marine meteorology, Summer, Upwelling (U)

This is one of a series of reports consisting of abstracts of recent technical reports in various areas of Oceanography, generated by contractors sponsored by the Office of Naval Research. (U)

AD- 785 867 8/10
TEXAS UNIV AUSTIN APPLIED RESEARCH LABS

The Penetration of Highly Directional Acoustic Beams into a Sedimentary Bottom. Part I. (U)

DESCRIPTIVE NOTE: Technical rept. 1 Apr-16 Jul 74,
JUL 74 65P Horton,Claude W. , Sr;
REPT. NO. ARL-TR-74-28-Pt-1
CONTRACT: N00014-70-A-0166-0008
PROJ: NR-240-014, RF34-371
TASK: R34-371-101

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *Ocean bottom, *Sediments, *Acoustic properties, Underwater sound, Acoustic velocity, Acoustic attenuation (U)
IDENTIFIERS: Phase velocity, Wave equations (U)

The following theoretical problem is solved. What is the pressure field in an underlying medium when a highly directional acoustic beam in water impinges on the bottom sediments. The acoustic velocity in the bottom is larger than that of the water, and the velocity ratio is such that plane wave theory predicts total internal reflection (in the absence of attenuation) at a grazing angle near 28 degrees. The incident beam is represented by a bundle of plane waves, and an approximate expression for the resulting pressure field in the bottom is obtained by the principle of stationary phase. In Part I it is assumed that all of the plane waves in the bundle have the same phase. In Part II a phase structure will be introduced in order to represent the nearfield of the source. (Modified author abstract) (U)

AD- 785 245 8/3
ENVIRONMENTAL PREDICTION RESEARCH FACILITY (NAVY) MONTEREY CALIF

Computation of Real-Time Currents off Southern California with Multi-Layer Hydrodynamical-Numerical Models, (U)

JUL 74 75P Laevastu,T. ;Hamilton,G. D. ;
REPT. NO. ENVPREDRSCHF-Tech paper-10-74
PROJ: W3713

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Pacific Ocean, Deep water, Real time, Wind, Mathematical models, Tidal currents, Hydrodynamics, Sea level, Harmonic analysis , Coastal regions, Atmospheric circulation, Correlation techniques, Finite difference theory (U)

The measurement of currents at various levels in deep water is a difficult and expensive task, and the few available measurements do not allow the construction of a coherent picture of these currents. The available general circulation models have not yet reproduced the general circulation in the desired detail and they are unable to reproduce real-time (synoptic) currents. The only method for computation of real-time currents in the ocean, including wind and tidal currents, is by the use of the Hansen type Multi-Layer Hydrodynamical-Numerical Models. (Modified author abstract) (U)

AD- 784 637 8/3
FLORIDA STATE UNIV TALLAHASSEE GEOPHYSICAL FLUID DYNAMICS INST

Equatorial Jet in the Indian Ocean: Theory, (U)

MAR 74 6P O'Brien,James J. ;
Hurlburt,H. E. ;
REPT. NO. GFDI-Contr.b-98, 127
CONTRACT: N00014-67-A-0235-0002
PROJ: NR-083-231

UNCLASSIFIED REPORT
Availability: Pub. in Science, v184 p1075-1077, 7 Jun 74.
SUPPLEMENTARY NOTE: Revision of report dated 26 Dec 73.

DESCRIPTORS: *Ocean currents, *Jet flow, *Indian Ocean, Upwelling, Mathematical models, Wind, Monsoons, Ocean surface, Theory, Equatorial regions (U)
IDENTIFIERS: Primitive equations (U)

A nonlinear numerical model and a simple analytical theory explain the basic features of the equatorial surface jet in the Indian Ocean recently reported by Wyrtki. The observed width of this transient current, 500 kilometers, is given theoretically by twice the baroclinic equatorial radius of deformation. The numerical model reproduces all Wyrtki's observations of this natural phenomenon. (Author) (U)

AD- 784 421 8/10 8/7
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Cruise Data Report. CHAIN 115 Leg 2, SOUTHLANT Expedition. (U)

DESCRIPTIVE NOTE: Technical rept., AUG 74 24P Richards,D. A. ;Groman,R. C. ;Gegg,S. R. ;
REPT. NO. WHOI-74-59
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *Oceanographic data, *Marine geophysics, Navigation charts, Bathymetry, Gravity, Anomalies, Geomagnetism, Oceanographic ships, Atlantic Ocean (U)
IDENTIFIERS: Chain vessel, Gravity anomalies, Magnetic anomalies (U)

The report summarizes the geological and geophysical activities which were undertaken during Leg 2 (Dakar to Cape Town) of R/V CHAIN Cruise 115 (SOUTHLANT Expedition). A series of charts and profiles display the navigational, bathymetry, total field magnetic anomaly, and free air gravity anomaly measurements, as well as the locations of coring, camera and hydrographic stations. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 783 990 6/6 8/1
NATIONAL ACADEMY OF SCIENCES WASHINGTON D C

Background Papers for a Workshop on Inputs, Fates, and Effects of Petroleum in the Marine Environment. Volume II. (U)

MAY 73 479P
CONTRACT: N00014-67-A-0244-0028

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-783 989

DESCRIPTORS: *Oceanography, *Petroleum products, *Meetings, *Water pollution, Oils, Pollution, Naval research, Coastal regions, Toxicology, Aquatic animals, Marine biology (U)
IDENTIFIERS: *Oil pollution, Water pollution effects(Animals), Ocean environments (U)

;Contents: The occurrence and amount of pelagic tar in the open ocean; The surface activity of petroleum and its influence on the behavior of oil at sea; Biological fates of petroleum hydrocarbons in aquatic macroorganisms; Biological effects of chronic oil pollution on coastal exosystems; Uptake and depuration of specific hydrocarbons from oil by the bivalves rangia cuneata and crassostrea virginica; Polynuclear aromatic hydrocarbon pollution of the marine environment. (U)

AD- 783 989 6/6 8/1
NATIONAL ACADEMY OF SCIENCES WASHINGTON D C

Background Papers for a Workshop on Inputs, Fates, and Effects of Petroleum in the Marine Environment. Volume I. (U)

MAY 73 391P
CONTRACT: N00014-67-A-0244-0028

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-783 990.

DESCRIPTORS: *Oceanography, *Petroleum products, *Meetings, *Water pollution, Oils, Naval research, Oil spills, Chemical analysis, Aquatic animals, Biodeterioration, Marine biology, Sources (U)
IDENTIFIERS: *Oil pollution, Ocean environments, Water pollution effects(Animals) (U)

;Contents: The sources of oil entering the sea; Input of petroleum to the marine environment; Petroleum inputs to the marine environment from land sources; European experience in the identification of waterborne oil; Analytical techniques for the determination of petroleum contamination in marine organisms; The quantitative determination of trace concentrations of petroleum-derived pollutants in the ocean; Partitioning of hydrocarbons between the atmosphere and natural waters; Hydrocarbon biodegradation kinetics; Analytical approach in the evaluation of biological damage resulting from spilled oil. (U)

AD- 783 723 8/10
COAST GUARD WASHINGTON D C OCEANOGRAPHIC UNIT

Light Vessel/Light Station Oceanographic Observations, East Coast of the United States, January-December 1972. (U)

DESCRIPTIVE NOTE: Oceanographic rept., FEB 74 125P Kangas,R. E. ;
REPT. NO. USCG-373-62

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated Jul 73, AD-774 503.

DESCRIPTORS: *Oceanographic data, *North Atlantic Ocean, Bathythermograph data, Salinity, Diurnal variations, Coastal regions, Thermoclines, Lighthouses, Boats, United States (U)

Daily water temperatures and salinities for 1972 from 11 locations along the Atlantic coast are presented and discussed. (Author) (U)

AD- 783 593 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Observations of Low-Frequency Current Fluctuations on the Continental Slope and Rise Near Site D. (U)

DESCRIPTIVE NOTE: Technical rept.,
FEB 74 24P Schmitz,William J. , Jr;
REPT. NO. WHOI-74-53, WHOI-Contrib-3210
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Marine Research, v32 n2 p233-251 1974.

DESCRIPTORS: *Ocean currents, *North Atlantic Ocean, Continental shelves, Flowmeters, Networks, Low frequency, Ocean bottom, Depth (U)
IDENTIFIERS: Continental slopes (U)

An array of near-bottom current meters was set on the continental rise and slope near Site D in the autumn, 1970. At the junction of the slope and rise and over the slope the low-frequency flow was predominantly along depth contours, and flow across depth contours was dominated by higher frequencies. The low-frequency kinetic energy decays in both directions away from a mooring position near the slope-rise junction. The low-frequency variability is coherent along and incoherent across depth contours for 25 km separations, and coherent in both directions over fractions of a km. There is marginally significant evidence for westward (in the topographic sense) phase propagation at roughly 40 cm/s with wavelength in this direction of about 600 km. (Modified author abstract) (U)

AD- 783 189 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF ADVANCED OCEAN ENGINEERING LAB

Advanced Marine Technology: Electro-Magnetic Roughness of the Ocean Surface, 2-30 MHz. (U)

DESCRIPTIVE NOTE: Final rept. 15 Dec 70-31 Oct 73,
MAY 74 107P Stewart,Robert H. ;
REPT. NO. AOEL-61, SIO-Ref-74-13
CONTRACT: N00014-69-A-0200-6012
PROJ: NR-294-016

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-777 458.

DESCRIPTORS: *Ocean waves, *Ocean surface, *Electromagnetic scattering, Surface roughness, Radio waves, High frequency, Loran, Signal processing, Spectrum analysis (U)
IDENTIFIERS: Remote sensing (U)

The report is on a three-year project entitled 'Electromagnetic Roughness of the Ocean Surface, 2-30 MHz'. The work was concerned with using HF radio waves scattered from the sea surface primarily as a tool to measure the directional distribution of ocean wave energy. Other areas investigated were the breakdown of linear scattering theory at the high end of the HF radio band, and the use of scatter as a method to measure ocean currents remotely. (Modified author abstract) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 783 105 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Preliminary Cruise Report and Index of Geophysical Data, Chain 115 Leg 1. (U)

DESCRIPTIVE NOTE: Technical rept., JUN 74 20P Richards,D. A. ;Gegg,S. R. ;Groman,R. C. ;
REPT. NO. WHOI-74-38
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT

DESCRIPTORS: *Marine geophysics, *North Atlantic Ocean, *South Atlantic Ocean, Profiles, Indexes, Bathymetry, Gravity, Seamounts, Seismic reflection, Ocean bottom sampling, Heat transmission, Navigation, Magnetic anomalies, Charts, Geomagnetism (U)
IDENTIFIERS: Mytilis Seamount, Gambia Abyssal Plain, Sierra Leone Rise (U)

Geological and geophysical activities which were undertaken during Leg 1 (Woods Hole to Dakar) of R/V CHAIN Cruise 115 (SOUTHLANT Expedition) are summarized. A series of charts and profiles display the navigation, bathymetry, total-field magnetic anomaly, and free-air gravity anomaly measurements, as well as the locations of seismic reflection lines and coring, heat flow, and hydrographic stations. (Modified author abstract) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 782 998 8/1 8/3 8/10 17/1
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Bibliography of Technical Reports - 1973. (U)

JAN 74 16P Fuglister,Cecelia B. ; Simmons,Nancy S. ;
REPT. NO. WHOI-73-93

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated Jan 72, AD-782 993 and PB-221 079.

DESCRIPTORS: *Oceanographic data, *Bibliographies, Marine geology, Marine biology, Sediments, Ocean currents, Ocean bottom topography, Underwater sound, Algae (U)

The bibliography contains 93 references to investigations conducted at Woods Hole Oceanographic Institution, Massachusetts during 1973 in various areas of oceanography. (U)

AD- 782 987 8/7 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Physical Properties of Sedimentary Provinces, North Pacific and North Atlantic Oceans, (U)

74 28P Horn,David R. ;Delach, Marilyn N. ;Horn,Barbara M. ;
REPT. NO. LDGO-2019
CONTRACT: N00014-67-A-0108-0004, N00024-72-C-1152
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Deep Sea Sediments, p417-441 1974.
SUPPLEMENTARY NOTE: Sponsored in part by Grants NSF-GX-33616, and NSF-GA-35454.

DESCRIPTORS: *Ocean bottom, *Sediments, Ocean bottom sampling, Pacific Ocean, North Atlantic Ocean, Lithology, Texture, Acoustic properties, Deposition, Grain size, Density, Moisture, Porosity, Maps, Tables(Data) (U)
IDENTIFIERS: NTISNSF, North Pacific Ocean (U)

The North Pacific and North Atlantic Oceans are sites of very slow and relatively rapid deposition respectively. In this brief account the authors describe the lithologic, textural and physical properties of sediment cores and define geographic limits of provinces of similar sediment. Values of mean grain size, wet density, moisture content, and porosity are presented. (Modified author abstract) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 782 862 8/3
YALE UNIV NEW HAVEN CONN DEPT OF GEOLOGY AND GEOPHYSICS

Studies of the Vertical Structure of Horizontal Currents near Bermuda. (U)

DESCRIPTIVE NOTE: Interim rept. 1969-1971,
NOV 73 13P Rossby,H. Thomas ;
REPT. NO. 1
CONTRACT: N00014-67-A-0097-0001
PROJ: NR-083-210

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v79 n12 p1781-1791, 20 Apr 74.
SUPPLEMENTARY NOTE: Revision of report dated 15 Oct 73.

DESCRIPTORS: *Ocean currents, *Atlantic Ocean, *Bermuda, Stratification, Pressure, Density, Flowmeters, Measurement, Motion (U)
IDENTIFIERS: Baroclinicity (U)

A number of vertical profiles of horizontal motion at a site 70 km south of Bermuda were obtained in 1969 and 1970. An extensive analysis of the distribution of kinetic energy as a function of vertical mode was conducted. Rough equipartition of the kinetic energy into the barotropic (25 ergs/cc) and lowest baroclinic (20 ergs/cc) was found. This study was partly prompted by the concern as to whether conventional current measuring techniques, such as current meters and Swallow floats, can adequately resolve the low-frequency evolution of the vertical structure. (Modified author abstract) (U)

AD- 782 801 8/10
OSSERVATORIO GEOFISICO SPERIMENTALE TRIESTE (ITALY)

A Note of the Oceanographic Properties off the Eastern Sicily Coast (Summer 1972) (Nota Sulle Condizioni Oceanografiche et al Largo delle Coste Orientali Siciliane Nell-Estate del 1972), (U)

73 24P Grancini,Gianfranco ;Magazzu, Giuseppe ;
REPT. NO. Contrib-234

UNCLASSIFIED REPORT
Availability: Pub. in Mem. Biol. Mar. Ocean., v3 n2-3-4 p27-49 1973.
SUPPLEMENTARY NOTE: Prepared in cooperation with Universita di Messina, (Italy). Instituto di Zoologia, Contrib-27. Summary in Italian.

DESCRIPTORS: *Oceanographic data, *Mediterranean Sea, *Water pollution, Coastal regions, Temperature, Salinity, Oxygen, Ocean currents, Sicily (U)
IDENTIFIERS: Ionian Sea, Messina Strait (U)

Investigations carried out during summer 1972 off the Eastern Sicily coast provide some useful considerations about the role played by biochemical and physical properties as controlling factors of the pollution conditions of the coastal environment. Correlations among the parameters such as oxygen saturation, total fluorescence and light penetration, put in evidence the existence of water masses of mixed thyrrenian origin along the coast and of ionian origin offshore. From the computation of the geostrophic currents, the ionian waters flow with a mean velocity of 40 to 45 cm/sec and contribute to form a close eddy just along the coast. Being this a possible reservoir for pollutants, the box model theory applied to the eddy and to its exchange with the surrounding waters predicts a dilution factor of 500 with respect to the total rate of discharge from the coast. (Modified author abstract) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 782 794 8/10 13/2
OSSERVATORIO GEOFISICO SPERIMENTALE TRIESTE (ITALY)

Correlations between Chemico-Physical and Microbiological Factors: Contribution of the Oceanography to the Coastal Pollution Problem, (U)

73 19P Cescon,B. ;Grancini,G. ; Paoletti,A. ;
REPT. NO. Contrib-228b

UNCLASSIFIED REPORT
Availability: Pub. in Atti 5 Coll. Int. Oceanogr. Med. Messina, p273-290 1973.
SUPPLEMENTARY NOTE: Prepared in cooperation with Facolta di Scienze, Napoli (Italia). Instituto di Igiene. Summary in Italian and French.

DESCRIPTORS: *Oceanographic data, *Water pollution, *Mediterranean Sea, Coastal regions, Marine biology, Ammonia, Nitrates, Nitrites, Phosphates, Oxygen, Hydrogen sulfide, Silicates, Salinity, pH factor, Temperature (U)
IDENTIFIERS: Naples Gulf, Biochemical oxygen demand (U)

The paper represents a first attempt to catch the significative correlations between chemico-physical parameters (ammonia, nitrite, nitrate, reactive phosphate, dissolved oxygen, BOD5, hydrogen sulphide, silicate, total alcalinity, salinity, temperature and pH) and bacterial data. The research was undertaken in the Naples area where different kinds of waste effluents are available, being the great domestic sewage of cuma, the variously polluted Sarno river and others. The results, beside allowing a satisfactory correlation between data, confirm the usefulness of a strict collaboration among different scientific fields to monitoring the marine pollution. (Modified author abstract) (U)

AD- 782 611 8/12 8/10 17/9
KANSAS UNIV/CENTER FOR RESEARCH INC LAWRENCE

Scatterometry Techniques for Sensing Arctic Sea Ice Thickness. (U)

DESCRIPTIVE NOTE: Final rept.,
NOV 73 326P Biggs,Albert W. ;Fayman,D. L. ;Matreci,R. ;Moore,R. K. ;Parashar,S. K. ;
REPT. NO. CRES-TR-185-12, CRES-TR-185-13
CONTRACT: N60921-70-C-0221

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Includes appendix A.

DESCRIPTORS: *Sea ice, *Doppler radar, *Arctic Ocean, Thickness, Radar images, Scattering, High frequency, Radar reflections, Interfaces, Classification, Electrical properties, Identification, Aerial photographs, Radar cross sections, Backscattering, Wave equations, Discrimination, Surface properties, Roughness, Alaska (U)
IDENTIFIERS: *Remote sensing (U)

Investigation of radar discrimination of sea ice is presented. Radar scatterometer data at 75 and 2.25 cm wavelength obtained from NASA Earth Resources Aircraft Program Mission 126 were analyzed. The mission was conducted in April, 1970, off the coast of Point Barrow, Alaska. The scatterometer data were separated into seven different categories of sea ice. Sea ice was categorized according to thickness and age. The radar scattering from sea ice is compared for different sea ice types. An analytical theory of scatter from sea ice was developed and is presented. (Modified author abstract) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 782 599 8/3
DEFENSE MAPPING AGENCY AEROSPACE CENTER ST LOUIS AIR FORCE STATION MO TECHNICAL TRANSLATION SECTION

Tidal Chart of the Pacific, Atlantic and Indian Oceans (Karta Prilivov Tikhogo, Atlanticheskogo i Indiiskogo Okeanov), (U)

MAY 74 23P Tiron,K. D. ;Sergeev,Yu. N. ;Michurin,A. N. ;
REPT. NO. DMAAC-TC-2024

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Technical trans. of Leningrad Univ. Vestnik (USSR). v22 n24 Seriya Geologii i Geografii, n4 p123-135 1967, by George Synenko.

DESCRIPTORS: *Ocean tides, *Pacific Ocean, *Atlantic Ocean, *Indian Ocean, Ocean currents, Harmonic analysis, Maps, Translations, USSR (U)
IDENTIFIERS: Hanson method (U)

The USSR translation discusses the various cotidal charts proposed through the years. A numerical method, carried out by Hanson in 1949, has become very popular and served as a basis for the computation of cotidal diagrams for a number of seas. The Hanson method is thoroughly explained. (Author) (U)

AD- 782 589 8/5
DEFENSE MAPPING AGENCY AEROSPACE CENTER ST LOUIS AIR FORCE STATION MO TECHNICAL TRANSLATION SECTION

Gravity Measurements in the Sea of Japan (Izmereniya Sily Tyazhesti v Yaponskom More). (U)

APR 74 136P Stroev,P. A. ;Pavlov,Yu. A. ;Panteleev,V. L. ;Bagramyantz,V. D. ;
REPT. NO. DMAAC-TC-1990

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. of Moscow Univ. Gosudarstvennyi Astronomicheskii Institut. Trudy (USSR) v43 n1 p3-115 1972, by George Synenko.

DESCRIPTORS: *Gravity, *Japan Sea, Translations, USSR, Measurement, Pacific Ocean (U)
IDENTIFIERS: *Gravimetric geodesy, Gravity anomalies (U)

A description is given and results presented of gravimetric investigations in the area of the Sea of Japan, on the islands around Japan and partially in the waters of the northwestern part of the Pacific Ocean washing Japan. Data of Soviet expeditions are presented in the form of lists of gravity stations. Data of the Japanese expeditions are given in the form of lists, individual maps, diagrams and profiles. The isostatic anomalies are computed and presented for the Japanese measurements in the area of the Sea of Japan. Apparatus, methods of surveying, conditions of observations and accuracy estimations of the obtained results are described. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 782 587 8/10
HAWAII INST OF GEOPHYSICS HONOLULU

Phosphorite Deposits from the Sea Floor off Peru and Chile: Radiochemical and Geochemical Investigations Concerning Their Origin. (U)

DESCRIPTIVE NOTE: Doctoral thesis,
MAY 74 178P Burnett,William C. ;
REPT. NO. HIG-74-3
CONTRACT: N00014-70-A-0016-0001, NSF-GX-28674
PROJ: NR-083-603

UNCLASSIFIED REPORT

DESCRIPTORS: *South Pacific Ocean, *Phosphates, *Ocean bottom, Peru, Chile, Continental shelves, Sedimentary rock, Carbonate minerals, Geologic age determination, Sedimentation, Tracer studies, Uranium, Isotopes, Theses (U)
IDENTIFIERS: NTISNSF, Phosphate nodules, Calcium phosphates (U)

Sedimentary phosphorites sampled from the sea floor off the coasts of Peru and Chile have been investigated to establish their ages and mode of formation. Results of uranium-series dating suggest that phosphate deposition was episodic rather than continuous during the late Pleistocene. Radiometric ages correlate well with periods of high eustatic stands of the sea. Bulk chemical and mineralogical compositions of the phosphate rocks were determined by instrumental techniques. Microanalysis, with an electron probe microanalyzer and a scanning electron microscope suggests that the apatite was authigenic and had formed as direct chemical precipitate rather than by replacement. A model of phosphorite formation is proposed which involves inorganic precipitation of apatite within anoxic pore waters and subsequent concentration of the apatite by physical processes. The concentration of apatite into indurated phosphate rocks is brought about by winnowing and reworking processes, possibly in response to a change in the sedimentary environment caused by eustatic sea-level fluctuations or tectonic movements. (Modified author abstract) (U)

AD- 782 585 8/10
RHODE ISLAND UNIV KINGSTON GRADUATE SCHOOL OF OCEANOGRAPHY

Fluoride Chlorinity Ratios and Hydrographic Observations in the North Atlantic: 1971-1972. (U)

DESCRIPTIVE NOTE: Technical rept.,
JUN 74 38P Miller,Gerard R. , Jr.;
Kester,Danna R. ;
REPT. NO. Ref-74-4
CONTRACT: N00014-68-A-0215-0003
PROJ: NR-083-165

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-723 237.

DESCRIPTORS: *Oceanographic data, *North Atlantic Ocean, *Fluorides, *Chlorides, Chemical analysis, Salinity, Temperature, Oxygen (U)

Oceanographic field data (temperature, salinity, oxygen and fluoride) from the surface of the seafloor were compiled for four cruises of R/V TRIDENT in the North Atlantic Ocean during 1971 and 1972. Documentation is provided for the analytical methods used for the fluoride measurements. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 782 526 8/7 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Underway Marine Geophysical Data in the North Atlantic, June 1961 - January 1971. Part F. Seismic Reflection Profiles. (U)

DESCRIPTIVE NOTE: Technical rept.,
APR 74 296P Ewing,John ;Ewing,Maurice ;
Windisch,Charles ;Aitken,Thomas ;
REPT. NO. TR-9-Pt-F, TR-3-Pt-F
CONTRACT: N00014-67-A-0108-0004, NSF-GA-27281
PROJ: NR-083-142

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Part E, AD-782 525 and Part A, AD-782 521.

DESCRIPTORS: *Marine geophysics, *North Atlantic Ocean, Seismic reflection, Profiles, Depth finding, Echo ranging, Ocean bottom topography, Oceanographic ships (U)
IDENTIFIERS: NTISNSF, Vema vessel, Robert D Conrad vessel (U)

The six-part report describes the underway marine geophysical data acquired by the Lamont-Doherty Geological Observatory during the period 1961-1971 in the North Atlantic aboard the Research Vessels VEMA and ROBERT D. CONRAD. The report presents the data obtained by the seismic reflection profiler along about 350,000 n. miles of track. (U)

AD- 782 525 8/7 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Underway Marine Geophysical Data in the North Atlantic, June 1961 - January 1971. Part E. Seismic Reflection Profiles. (U)

DESCRIPTIVE NOTE: Technical rept., APR 74 283P Ewing,John ;Ewing,Maurice ; Windisch,Charles ;Aitken,Thomas ;
REPT. NO. TR-9-Pt-E, TR-3-Pt-E
CONTRACT: N00014-67-A-0108-0004, NSF-GA-27281
PROJ: NR-083-142

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Part D, AD-782 524. Report on Lamont-Doherty Survey of the World Ocean.

DESCRIPTORS: *Marine geophysics, *North Atlantic Ocean, Seismic reflection, Profiles, Depth finding, Echo ranging, Ocean bottom topography, Oceanographic ships (U)
IDENTIFIERS: NTISNSF, Vema vessel (U)

The report presents the data obtained from the seismic reflection profiler along about 350,000 n. miles of track. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 782 524 8/7 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Underway Marine Geophysical Data in the North Atlantic, June 1961 - January 1971. Part D. Bathymetric, Geomagnetic, and Gravity Profiles. (U)

DESCRIPTIVE NOTE: Technical rept., APR 74 251P Talwani,Manik ;Hayes,Dennis ;Pitman,Walter ;Aitken,Thomas ;
REPT. NO. TR-9-Pt-D, TR-3-Pt-D
CONTRACT: N00014-67-A-0108-0004, NSF-GA-27281
PROJ: NR-083-142

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Part C, AD-782 523.

DESCRIPTORS: *Marine geophysics, *North Atlantic Ocean, Navigation, Bathymetry, Geomagnetism, Gravity, Depth finding, Seismic reflection, Echo ranging, Oceanographic ships, Magnetometers (U)
IDENTIFIERS: NTISNSF, Vema vessel, Robert D Conrad vessel, Gravity anomalies (U)

The geophysical data profiles of the underway data are displayed in computer plots. In addition, these plots indicate ship's position, speed, course, cruise station numbers, etc. All data are plotted against distance in nautical miles along track. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 782 523 8/7 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Underway Marine Geophysical Data in the North Atlantic, June 1961 - January 1971. Part C. Bathymetric, Geomagnetic, and Gravity Profiles. (U)

DESCRIPTIVE NOTE: Technical rept., APR 74 268P Talwani,Manik ;Hayes,Dennis ;Pitman,Walter ;Aitken,Thomas ;
REPT. NO. TR-9-Pt-C, TR-3-Pt-C
CONTRACT: N00014-67-A-0108-0004, NSF-GA-27281
PROJ: NR-083-142

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Part B, AD-782 522.

DESCRIPTORS: *Marine geophysics, *North Atlantic Ocean, Navigation, Bathymetry, Geomagnetism, Gravity, Profiles, Echo ranging, Seismic reflection, Depth finding (U)
IDENTIFIERS: NTISNSF, Vema vessel, Gravity anomalies (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 782 522 8/7 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Underway Marine Geophysical Data in the North Atlantic, June 1961 - January 1971. Part B. Navigation Charts. (U)

DESCRIPTIVE NOTE: Technical rept. APR 74 63P
REPT. NO. TR-9-Pt-B, TR-3-Pt-B
CONTRACT: N00014-67-A-0108-0004, NSF-GA-27281
PROJ: NR-083-142

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Part A, AD-782 521.

DESCRIPTORS: *Marine geophysics, *North Atlantic Ocean, Navigation charts, Geomagnetism, Gravity, Echo ranging, Depth finding, Norwegian Sea, Mexico Gulf, Mediterranean Sea, Caribbean Sea (U)
IDENTIFIERS: NTISNSF (U)

Track charts for Lamont-Doherty Geological Observatory underway magnetic, gravity and depth data in the North Atlantic June 1961-January 1971 are given including the Norwegian Sea, Gulf of Mexico, Caribbean and Mediterranean Sea. (Author) (U)

AD- 782 521 8/7 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Underway Marine Geophysical Data in the North Atlantic, June 1961 - January 1971. Part A. Navigation and General Information. (U)

DESCRIPTIVE NOTE: Technical rept., APR 74 407P Talwani,Manik ;Poppe,Barbara ;Hastings,Joan ;Aitken,Thomas ;
REPT. NO. TR-9-Pt-A, TR-3-Pt-A
CONTRACT: N00014-67-A-0108-0004, NSF-GA-27281
PROJ: NR-083-142

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Part B, AD-782 522 Report on Lamont - Doherty Survey of the World Ocean.

DESCRIPTORS: *Marine geophysics, *North Atlantic Ocean, Navigation, Bathymetry, Seismic reflection, Ocean bottom topography, Sediments, Gravity, Geomagnetism, Tables(Data), Depth finding, Echo ranging, Magnetometers, Instrumentation, Harbors, Oceanographic ships, Oceanographic data (U)
IDENTIFIERS: NTISNSF, Vema vessel, Robert D Conrad vessel, Navigation listings (U)

The six-part report describes the underway marine geophysical data acquired by the Lamont-Doherty Geological Observatory during the period 1961-1971 in the North Atlantic aboard the research vessels VEMA and ROBERT D. CONRAD. The study of the data that were acquired played a basic role in the development of the theories of sea floor spreading, of plate tectonics, and of sediment accumulation and transport which have revolutionized geological thinking. This report presents the data obtained along about 350,000 n. miles of track. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 782 366 8/3 4/2
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

A Compilation of Moored Wind and Current Observations Taken in 1967. (U)

DESCRIPTIVE NOTE: Technical rept., JAN 74 139P Tarbell,Susan ;
REPT. NO. WHOI-74-4
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Wind, *Oceanographic data, *North Atlantic Ocean, Meteorological instruments, Buoys, Marine meteorology, Depth finding, Power spectra, Sites, Flowmeters (U)
IDENTIFIERS: Denmark Strait (U)

Summaries of wind and current measurements made with current meters and wind recorders by the Woods Hole Oceanographic Institution during the year 1967 are presented. Averaged quantities are presented in computer-generated output as histograms, basic statistics, spectra, progressive vector diagrams, and east-north component plots. (Author) (U)

AD- 782 186 8/3 8/10
COAST GUARD WASHINGTON D C OCEANOGRAPHIC UNIT

Oceanography of the Grand Banks Region of Newfoundland, April-August 1971. (U)

DESCRIPTIVE NOTE: Oceanographic rept., JAN 74 136P Rosebrook,Alan D. ;
REPT. NO. USCG-373-60

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-774 500.

DESCRIPTORS: *Oceanographic data, *Newfoundland(Province), *North Atlantic Ocean, Icebergs, Sea ice, Ocean currents, Continental shelves, Tides, Salinity, Depth finding, Tables(Data) (U)
IDENTIFIERS: NTISdot, Labrador Sea, Grand Banks (U)

The report presents data on three cruises to the Grand Banks of Newfoundland during the 1971 International Ice Patrol to determine the currents and drift of icebergs. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 782 159 8/10
COAST GUARD WASHINGTON D C OCEANOGRAPHIC UNIT

Oceanographic Observations, North Atlantic Ocean Station CHARLIE, April 1967-April 1968. (U)

DESCRIPTIVE NOTE: Oceanographic rept., APR 74 158P Hannon,Lawrence J. ;
REPT. NO. USCG-373-61

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-691 475.

DESCRIPTORS: *Oceanographic data, *North Atlantic Ocean, Ocean surface, Temperature, Thermoclines, Salinity, Depth finding, Shallow water, Deep water (U)
IDENTIFIERS: NTISdot, Labrador Sea (U)

Oceanographic data from ten cruises on Ocean Station CHARLIE (52 deg 45 min N, 35 deg 30 min W) during the period April 1967 to April 1968 are presented. These data consist of observed and interpolated temperature and salinity data from 187 shallow (= or < 1500 meters) and 7 deep (> 1500 meters) casts. Temperature-depth and salinity-depth distribution plots show that the temperature distribution follows a seasonal trend, but the salinity distribution is more diverse. Temperature-salinity plots for the deep casts indicate the presence of Labrador Sea Water and Northeast Atlantic Deep Water. (Modified author abstract) (U)

AD- 782 130 8/3 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Reconnaissance of the Indian Ocean Equatorial Undercurrent near Addu Atoll, (U)

AUG 73 9P Knox,R. A. ;
CONTRACT: N00014-69-A-0200-6043

UNCLASSIFIED REPORT
Availability: Pub. in Deep-Sea Research, v21 p123-129 1974.
SUPPLEMENTARY NOTE: Prepared in cooperation with Massachusetts Inst. of Tech., Cambridge, Mass. Dept. of Meteorology, under Contract N00014-67-A-0204-0048. Revision of report dated 9 Mar 73.

DESCRIPTORS: *Ocean currents, *Oceanographic data, *Indian Ocean, Velocity, Thermoclines, Air water interactions, Monsoons, Atolls, Measurement, Maldive Islands (U)
IDENTIFIERS: Equatorial Undercurrent, Addu Atoll (U)

In February-March 1972, eight current and temperature profiles to 300m were made at stations bracketing Addu Atoll in the Maldives, using the method of Duing and Johnson. The profiles gave evidence of the Equatorial Undercurrent, as expected at this time of year, and further show that distortions of the flow due to the atoll occur only near-shore. (Modified author abstract) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 781 929 8/10
ARCTIC INST OF NORTH AMERICA WASHINGTON D C

Optical Properties of the Arctic Upper Water. (U)

DESCRIPTIVE NOTE: Technical rept.,
73 13P Smith,Raymond C. ;
REPT. NO. AINA-ONR-438:1
CONTRACT: N00014-70-A-0219-0001
PROJ: NR-307-105

UNCLASSIFIED REPORT
Availability: Pub. in Arctic, v26 n4 p303-313 1973.
SUPPLEMENTARY NOTE: Prepared in cooperation with Scripps Inst. of Oceanography, San Diego, Calif.

DESCRIPTORS: *Sea water, *Arctic Ocean, Transmittance, Optical properties, Depth, Reflectance, Ice Islands, Sea ice, Snow, Visibility, Solar radiation, Optical equipment (U)

Optical properties of the Arctic Upper Water have been measured from Fletcher's Ice Island, T-3, in the Arctic Ocean. Beam transmittance for various wavelengths and the upwelling and downwelling irradiance have been measured to a depth of 120 metres. In the spectral region of maximum transmittance the beam transmittance was found to be 93.1% per metre and the diffuse attentuation coefficient for irradiance was 0.0444 per metre. The data show that the Arctic Upper Water, in early May before the snow cover on the ice has cleared, is optically uniform and very clear. (Author) (U)

AD- 781 769 8/3
RHODE ISLAND UNIV KINGSTON GRADUATE SCHOOL OF OCEANOGRAPHY

Bottom Currents, Nepheloid Layers and Sedimentary Features under the Gulf Stream near Cape Hatteras, (U)

OCT 73 12P Betzer,Peter R. ;Richardson, Philip L. ;Zimmerman,Herman B. ;
CONTRACT: N00014-68-A-0215-0003

UNCLASSIFIED REPORT
Availability: Pub. in Marine Geology, v16 p21-29 1974.

DESCRIPTORS: *Ocean currents, *North Atlantic Ocean, *Gulf Stream, Ocean bottom, Sediments, Layers, Deep water (U)
IDENTIFIERS: Cape Hatteras (U)

The velocities of near-bottom currents were measured at six locations on a 180-km transect of the Gulf Stream adjacent to Cape Hatteras. The average velocities indicate a southwesterly flow -- the Western Boundary Undercurrent. Maximum recorded velocities at each of the six locations ranged from 15 to 47 cm/sec. Depth distributions of suspended particulate matter over the transect indicated that near-bottom nepheloid layers were present and that relatively large amounts of suspended matter were being carried to the southwest. Bottom photographs taken over the same transect, however, showed no evidence that the sediment surface was being affected by the active bottom currents. These results indicate that swift bottom currents do not always leave a record of their work on deep ocean sediment. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 781 748 8/7
MASSACHUSETTS INST OF TECH CAMBRIDGE DEPT OF EARTH AND PLANETARY SCIENCES

Regional Synthesis of the Deep Sea Drilling Results from Leg 22 in the Eastern Indian Ocean. (U)

DESCRIPTIVE NOTE: Interim rept.,
74 20P Sclater,John G. ;von der Borch,Chris ;Veevers,John J. ;Hekinian,Roger ;Thompson,Robert W. ;
CONTRACT: N00014-67-A-0204-0048
PROJ: NR-083-157

UNCLASSIFIED REPORT
Availability: Pub. in Initial Reports of the Deep Sea Drilling Project, v22 p815-831 1974.

DESCRIPTORS: *Tectonics, *Marine geology, *Indian Ocean, Ocean bottom topography, Ocean bottom sampling, Ocean currents, Magnetic anomalies (U)
IDENTIFIERS: Ninetyeast Ridge, Plate tectonics, Ocean bottom spreading (U)

The eastern Indian Ocean is dominated by three long linear topographic features-the Chagos-Laccadive Plateau which separates the Central Indian Basin from the central Indian Ridge, the Ninetyeast Ridge which separates this basin from the Wharton Basin, and Broken Ridge which forms the southern boundary of the Wharton Basin. The Ninetyeast Ridge is by far the longest and most impressive feature. For most of its length the Ninetyeast Ridge has an elevation of 1500 to 2000 meters above that of the surrounding ocean floor. In this chapter a regional summary of the data gathered from the holes drilled on Leg 22 is presented. For convenience the results from holes drilled in the Wharton Basin, the data from the sites on and on either side of the Ninetyeast Ridge, and the results from drilling on the Bengal fan are discussed separately. Finally, the implications of this synthesis for tectonic history of the Indian Ocean are discussed. (U)

AD- 781 692 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Deep Flow in the Madagascar and Mascarene Basins. (U)

DESCRIPTIVE NOTE: Technical rept., AUG 73 25P Warren,Bruce A. ;
REPT. NO. WHOI-74-25, WHOI-Contrib-3124
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT
Availability: Pub. in Deep-Sea Research, v21 p1-21 1974.
SUPPLEMENTARY NOTE: Revision of report dated 25 May 73.

DESCRIPTORS: *Ocean currents, *Indian Ocean, Circulation, Deep water, Ocean ridges, Hydrographic surveying, Thermoclines, Salinity, Madagascar (U)
IDENTIFIERS: Mascarene Basin (U)

Confirming a prediction of deep circulation theory, hydrographic sections along Lats. 12 degrees S and 23 degrees S between Madagascar and the Central Indian Ridge exhibit a western boundary current flowing northward close against Madagascar at depths greater than 3000-3500 m. It is 300-400 km wide at Lat. 12 degrees S, and its volume transport is estimated geostrophically to be 4-5 x(10 to the 6th power)cu m/s. The current derives from deep water in the Circumpolar Current, which moves northward into the western Crozet Basin and appears to pass into the Madagascar Basin near 27 degrees S, 65 degrees E. (Modified author abstract) (U)

AD- 781 618 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Monthly Mean Sea-Surface and Subsurface Temperature and Depth of the Top of the Thermocline Mediterranean, Black and Red Seas. (U)

DESCRIPTIVE NOTE: Technical note, AUG 73 106P Robinson,Margaret K. ;
CONTRACT: N00014-69-A-0200-6006
MONITOR: FNW TN-73-3

UNCLASSIFIED REPORT

DESCRIPTORS: *Mediterranean Sea, *Black Sea, *Red Sea, *Thermoclines, Temperature, Ocean surface, Underwater, Bathythermograph data, Ocean bottom topography (U)

The large-scale temperature atlas of the Mediterranean, Black and Red Seas presents charts of mean monthly temperatures for the sea surface and five subsurface levels--100, 200, 300, 400, and 492 feet (150 meters)--based on bathythermograph (BT) data supplemented by available reversing thermometer data. Included in the atlas are monthly topographies of the top of the thermocline derived from the temperature fields and time-series curves for selected locations. (Author) (U)

AD- 781 541 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Wind-Induced Reversal in Red Sea Circulation, (U)

SEP 73 15P Patzert,William C. ;
CONTRACT: N00014-69-A-0200-6006

UNCLASSIFIED REPORT
Availability: Pub. in Deep-Sea Research, v21 p109-121 1974.
SUPPLEMENTARY NOTE: Revision of report dated 3 May 73.

DESCRIPTORS: *Ocean currents, *Red Sea, *Air water interactions, Wind, Surface waters, Salinity, Ocean surface, Upwelling, Winter (U)
IDENTIFIERS: Aden Gulf (U)

The monsoon reversal in the Red Sea circulation near and above sill depth is described and related to be the winds at the sea surface. During winter (Oct. - May), the surface waters flow north, sink in the northern Red Sea, and return to the south as a warm, high-salinity subsurface current that flows out over the shallow sill into the Gulf of Aden. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 781 540 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Transient Excess-Randon Profiles in Pacific Bottom Water, (U)

JAN 74 7P Chung,Yu-Chia ;
CONTRACT: N00014-69-A-0200-6006

UNCLASSIFIED REPORT
Availability: Pub. in Earth and Planetary Science Letters, v21 p295-300 1974.
SUPPLEMENTARY NOTE: Revision of report dated 29 Aug 73.

DESCRIPTORS: *Pacific Ocean, *Ocean bottom, *Radon, Temperature, Salinity, Radium (U)

Five near-bottom excess-radon profiles have been measured at the Geosecs-I station in the northeast Pacific, at varying intervals over a period of two and a half years. These profiles vary considerably in both structure and radon concentration, indicating transient characteristics of the bottom water in the deep Pacific. Only two of the five profiles are of the quasi-exponential type (Y. Chung and H. Craig); the stationary vertical eddy diffusivities calculated from these two profiles are 129 cm squared/sec in November, 1971, and 22 cm squared/sec obtained five months later. A single bottom-radon profile was measured in the western-boundary-current region of the South Pacific at the Geosecs-III station. This profile is also of the quasi-exponential type, with a vertical diffusivity of 32 cm squared/sec. Although the radon concentrations of the three quasi-exponential profiles and the calculated diffusivities are quite different, the integrated excess-randon inventory in the water column, and the calculated flux of radon across the sediment-water interface, vary by only a factor of two in the two areas studied. (Author) (U)

AD- 781 539 4/2 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Thermal Communication Between the Sea Surface and the Lower Troposphere, (U)

APR 73 7P Namias,Jerome ;
CONTRACT: N00014-69-A-0200-6043

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Physical Oceanography, v3 n4 p373-378 Oct 73.
SUPPLEMENTARY NOTE: Revision of report dated 2 Apr 73.

DESCRIPTORS: *Air water interactions, *Pacific Ocean, *Ocean surface, Temperature, Troposphere, Heat transfer (U)
IDENTIFIERS: North Pacific Ocean (U)

Seasonal mean sea surface temperatues and 1000-700 mb thicknesses are correlated by pattern and also for 5 degrees squares over the eastern North Pacific in order to find out more about bulk heat exchange between ocean and atmosphere. The results bring out the importance of static stability as a primary variable in heat exchange--the stability being varied by air mass modifications associated with advection, by cyclonic and frontal lifting, and by heating or cooling of the ocean surface. Geographical and temporal effects are described against this background. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 781 534 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Current Meter Data: An Indication of Either Subtropical Countercurrent or Anticyclonic Island Circulation, (U)

JUL 73 6P Patzert,William C. ;
CONTRACT: N00014-69-A-0200-6006

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v78 n33 p7919-7922, 20 Nov 73.
SUPPLEMENTARY NOTE: Revision of report dated 25 Jun 73.

DESCRIPTORS: *Ocean currents, *Pacific Ocean, Circulation, Flowmeters, Velocity, Seasonal variations, Hawaii (U)
IDENTIFIERS: North Pacific Ocean (U)

The resultant flow calculated from eight simultaneous near-surface current measurements made with moored current meters anchored near seven of the Leeward Islands (from 23 degrees N to 28 degrees N) of the Hawaiian archipelago during a 45-day period in April and May 1969 was to the northeast between 23 degrees N and 25 degrees N and to the northwest between 26 degrees N and 28 degrees N at approximately 5/cm/sec. (Modified author abstract) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 781 386 8/3
PHYSICAL DYNAMICS INC BERKELEY CALIF

Energy Spectra of the Ocean Surface: III. Modulation by a Surface Current. (U)

DESCRIPTIVE NOTE: Semi-annual rept. Jul-Dec 73, DEC 73 45P Case,Kenneth M. ;Watson, Kenneth M. ;West,Bruce J. ;
REPT. NO. PD-73-047
CONTRACT: F30602-72-C-0494, ARPA Order-1649
MONITOR: RADC TR-74-110

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Part 2, AD-775 735.

DESCRIPTORS: *Ocean surface, *Ocean currents, *Ocean waves, Modulation, Surface waves, Approximation, Partial differential equations, Energy, Spectra (U)
IDENTIFIERS: WKB approximation (U)

Several models for the analysis of the modulation of the ocean surface wave spectrum by a prescribed surface current are reviewed. Both an eigenmode description and WKB approximation are studied in two horizontal dimensions. The results are expressed as a modulation of the surface wave amplitude power spectrum. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 781 385 8/3
PHYSICAL DYNAMICS INC BERKELEY CALIF

A Transport Equation Description of Non-Linear Ocean Surface Wave Interactions. (U)

DESCRIPTIVE NOTE: Technical rept., JAN 74 50P Watson,Kenneth M. ;West, Bruce J. ;
REPT. NO. PD-73-048
CONTRACT: F30602-72-C-0494, ARPA Order-1649
MONITOR: RADC TR-74-116

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean surface, *Ocean currents, *Surface waves, Interactions, Transport properties, Fourier analysis, Partial differential equations (U)
IDENTIFIERS: Surface gravity waves (U)

The evolution of the power spectrum of surface gravity waves is described by means of a transport equation. The effects of a slowly varying, prescribed ocean current and nonlinear wave-wave interactions are included. A definition due to Wigner of a localized power spectrum is used to derive the transport equation from the dynamical equations describing surface wave motion. (Author) (U)

AD- 781 304 8/10
TEXAS A AND M UNIV COLLEGE STATION DEPT OF OCEANOGRAPHY

Chemical Characterization of the Particulate Matter in the Near Bottom Nepheloid Layer of the Gulf of Mexico. (U)

DESCRIPTIVE NOTE: Technical rept., MAY 74 155P Feely,Richard A. ;
REPT. NO. A/M-Ref-74-4-T
CONTRACT: N00014-68-A-0308-0002
PROJ: NR-083-036

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean bottom, *Sediments, *Mexico Gulf, *Caribbean Sea, Aluminum, Silicon, Iron, Calcium, Magnesium, Carbon, Ocean currents, Theses (U)
IDENTIFIERS: *Suspended sediments, Sediment transport (U)

During cruises 71-A-12 and 73-A-3 of the R/V Alaminos eighty six samples of suspended matter at eleven near bottom stations in the Gulf of Mexico and northwestern Caribbean Sea were collected, and simultaneously, values for light scattering were measured. Selected samples of the suspended matter were analyzed for particulate aluminum, silicon, iron, calcium, magnesium, organic carbon and inorganic carbon. The results indicate that a permanent but highly variable near bottom nepheloid layer exists in the Gulf of Mexico but not in the northwestern Caribbean Sea. Average total suspended loads in the Gulf of Mexico nepheloid layer are two times higher than in the clear water above the nepheloid layer. Time studies over periods of one week and one and one-half years showed large total suspended matter variations which indicate that non steady-state processes, primarily vertical eddy diffusion and possibly advection, are controlling the distribution of suspended matter in the nepheloid layer. (Modified author abstract) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 781 283 8/3
RHODE ISLAND UNIV KINGSTON GRADUATE SCHOOL OF OCEANOGRAPHY

Current Measurements under the Gulf Stream near Cape Hatteras, North Carolina. (U)

DESCRIPTIVE NOTE: Technical rept., MAY 74 145P Richardson,Philip L. ;
REPT. NO. URI/GSO-Ref-74-3
CONTRACT: N00014-68-A-0215-0003

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Atlantic Ocean, Measurement, Gulf Stream, Ocean bottom, Velocity, Ocean surface, Bathythermograph data, GEK data, North Carolina, Theses (U)
IDENTIFIERS: Cape Hatteras (U)

Measurements were made in the Gulf Stream and Western Boundary Undercurrent in order to determine how the two currents cross each other near Cape Hatteras, North Carolina. Deep current measurements were made along a line normal to the Gulf Stream axis and 100 m above the ocean floor in depths from 1300-4100 m. Six current meter records were obtained in May, June, and July 1971. Current velocities up to 47 cm/sec towards the southwest were recorded under the Gulf Stream axis. All six records had their peak velocities in the southwest quadrant and four of the deepest records (2800 to 4000 m) had their mean velocity vector in the southwest direction. During the period of observations the Gulf Stream did not extend to the bottom in this area except as brief current reversals to the northeast. (Modified author abstract) (U)

AD- 781 002 8/10 8/3
SACLANT ASW RESEARCH CENTRE LA SPEZIA (ITALY)

Oceanography of the Norwegian and Greenland Seas and Adjacent Areas. Volume 2. Survey of 1870-1970 Literature. (U)

DESCRIPTIVE NOTE: Memorandum rept.,
JUN 74 122P Trangeled,Sven ;
REPT. NO. SACLANTCEN-SM-47

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated 1 Feb 73, AD-758 736.

DESCRIPTORS: *Oceanographic data, *Norwegian Sea, *Greenland Sea, *Polar regions, Ocean currents, Sea ice, Ocean bottom topography, Deep water, Bathymetry, Exploration, Marine meteorology, Marine geology, Arctic Ocean, Reviews (U)
IDENTIFIERS: Barents Sea (U)

A general description of oceanographic conditions in the areas is followed by a historical account of the investigations made, with emphasis on surveys performed during and after the International Geophysical Year (1957-1958). The literature titles that have been collected alphabetically and chronologically in Vol. 1 are here collected by subject in a series of appendices. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0MO7

AD- 780 962 8/10
DEFENCE RESEARCH ESTABLISHMENT OTTAWA (ONTARIO)

Sverdrup Channel. (U)

DESCRIPTIVE NOTE: Technical note,
MAY 74 37P Serson,Harold V. ;
REPT. NO. DREO-TN-74-10

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Sea ice, *Arctic regions, Thickness, Ocean currents, Temperature, Profiles, Salinity, Canada (U)
IDENTIFIERS: *Sverdrup Channel, Ice cover (U)

The report assesses the available physical and environmental information on Sverdrup Channel. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 780 435 13/2 8/3 8/1 8/10
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Nearshore Currents and Coral Reef Ecology of the West Coast of Guam, Mariana Islands. (U)

DESCRIPTIVE NOTE: Technical rept. 4 Feb-15 Sep 71,
JAN 74 202P Huddell,Howard D. ;Willett, J. Craig ;Marchand,Gregory ;
REPT. NO. NOO-SP-259
PROJ: NOO-122

UNCLASSIFIED REPORT
Availability: Paper copy available from Naval Oceanographic Office, Washington, D. C. 20373. PC$5.00.

DESCRIPTORS: *Micronesia, *Ocean currents, *Coral reefs, *Marine biology, *Sewage disposal, *Water pollution, Sewage treatment, Wastes(Sanitary engineering), Tracer studies, Site selection (U)
IDENTIFIERS: *Guam, *Mariana Islands (U)

The Naval Oceanographic Office conducted two field investigations of the currents and coral reef ecology at Guam during winter and summer 1971. These investigations were made to assist in planning the locations of proposed sewer outfalls and to determine the level of sewage treatment required to prevent toxic levels of pollution on the beaches of Guam and ecological damage to the surrounding coral reefs. Currents were observed with current meters, parachute drogues, and dye injections. Permanent ecological monitoring stations were installed on the reef. At these stations, the sessile organisms were identified and charted, underwater photographs were taken and photomosaics constructed, and various individual organisms were photographed close-up for documentation. (Modified author abstract) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 780 341 8/10
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Topography and Structure of the Western Puerto Rico Trench, (U)

OCT 73 11P Maley,Terry S. ;Sieber, Frederick D. ;Johnson,G. Leonard ;
PROJ: NR-083-284

UNCLASSIFIED REPORT
Availability: Pub. in Geological Society of America Bulletin, v85 p513-518 Apr 74.
SUPPLEMENTARY NOTE: Revision of report dated 17 May 73.

DESCRIPTORS: *Ocean bottom topography, *Bathymetry, *North Atlantic Ocean, Marine geophysics, Mapping, Sonar (U)
IDENTIFIERS: Puerto Rico Trench (U)

The U.S. Naval Oceanographic Office conducted a bathymetric survey in January 1972 over the western Puerto Rico Trench by using a highly directional, multiple-beam sonar system. The system is composed of 15 independent, 2 2/3 degree beams, of which two corresponding side beams may be displayed on one graphic recorder while the vertical beam is displayed on a second recorder. The axis of maximum depth of the western Puerto Rico Trench was determined for 70 n mi. The method required only one east-west trackline along the abyssal plain; the vertical beam and two corresponding side beams were utilized. (U)

AD- 780 190 8/10
ALASKA UNIV COLLEGE INST OF MARINE SCIENCE

Dynamics and Formation of Water Masses of the Gulf of Alaska. (U)

DESCRIPTIVE NOTE: Final rept.,
APR 74 46P Royer,Thomas C. ;
CONTRACT: N00014-67-A-0317-0002

UNCLASSIFIED REPORT

DESCRIPTORS: *Hydrography, *Alaska Gulf, Oceanographic data, Salinity, Temperature, Depth, Ocean currents (U)
IDENTIFIERS: *Water masses (U)

The report presents investigations into seasonal water structures in the Gulf of Alaska began in 1970 under ONR sponsorship. A series of eight hydrographic cruises were conducted on the northern shelf in the Gulf of Alaska from December 1970 through October 1972. The primary purpose of these expeditions was to determine if in winter the shelf is a region where intermediate water formation occurs. This study indicates that the region is not such a source of intermediate water. However, valuable observations and conclusions have been drawn from the data obtained on these cruises. These data represent the first seasonal observations in the Gulf of Alaska. These are also the first hydrographic observations made on that shelf in the fall quarter of any year. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 780 151 8/10 8/12
DEFENCE RESEARCH ESTABLISHMENT OTTAWA (ONTARIO)

Ice Regime and Ice Transport in Nares Strait, (U)

73 11P Dunbar,Moira ;
REPT. NO. DREO-TN-72-31

UNCLASSIFIED REPORT
Availability: Pub. in Arctic, v26 n4 p282-291 Dec 73.
SUPPLEMENTARY NOTE: Summaries in French and Russian.

DESCRIPTORS: *Sea ice, *Arctic Ocean, Transport properties, Ice reporting, Aerial reconnaissance, Estimates, Winter, Freezing, Canada (U)
IDENTIFIERS: *Nares Strait, Ice transport, Ice breakup (U)

In order to assess the part played by ice export through the Canadian Arctic Archipelago in the heat budget of the Arctic Ocean, one of the factors that must be known is the length of time per year that the channels are sealed by fast ice. To establish this for Nares Strait a series of flights was undertaken through the winters of 1970-71 and 1971-72. The resulting observations, combined with a search of historical records, suggest that the date of consolidation of ice in this channel tends to be late. A tentative calculation of annual export leads to the conclusion that the contribution of the Canadian channels may be greater than has been supposed. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 779 910 8/10 4/2
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

North Pacific Study: Physical Data Report. Cruises 1-12; September 1968 - September 1971. (U)

DESCRIPTIVE NOTE: Data rept.
74 123P
REPT. NO. SIO-Ref-73-26
CONTRACT: N00014-69-A-0200-6043

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Report on North Pacific Experiment - NORPAX.

DESCRIPTORS: *Pacific Ocean, *Oceanographic data, *Meteorological data, Tables(Data), Temperature, Salinity, Depth (U)
IDENTIFIERS: *North Pacific Ocean (U)

The data presented were collected on ten cruises by the USCGC Acushnet and one cruise by the RV Thomas Washington for the North Pacific Study Program. These cruises were for the purpose of deploying and servicing instrumented stations in the North Central Pacific to study the large-scale ocean and atmosphere interrelationships in the Pacific, and were funded under contracts with the Office of Naval Research. Tabulated in this report for the cruises of this program are temperature and salinity data from S/T/D lowerings and Nansen bottle casts collected for comparison with the data from the moored instrument stations. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 779 856 8/10 8/12
WASHINGTON UNIV SEATTLE APPLIED PHYSICS LAB

Studies in the Marginal Ice Zone of the Chukchi Sea: Analysis of 1972 Data, (U)

MAR 74 142P Garrison,Gerald R. ;Pence, Elbert A. ;Feldman,Henry R. ;Shah,Shashikant R. ;
REPT. NO. APL-UW-7311
CONTRACT: N00123-71-C-1333, ARPA Order-1782

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Sea ice, *Underwater sound, *Chukchi Sea, Thermoclines, Sound transmission, Underwater sound signals, Scattering, Reverberation, Acoustic velocity, Ocean currents, Wind, Temperature (U)
IDENTIFIERS: Ice floes (U)

The report is a summary and analysis of studies in the Marginal Ice Zone of the Chukchi Sea in 1972 by the Applied Physics Laboratory of the University of Washington. A camp on an ice floe was established and occupied for two weeks during the summer. Temperature profiles of the water under the floe were taken simultaneously at four stations every hour to measure the character and change of the thermal microstructure in the water. At the same time, acoustic pulses were transmitted from one station to another to determine the effect of the thermal microstructure on acoustic propagation. Two 1-week cruises across the Chukchi Sea were made, one before and one after the ice floe occupancy, to study the intrusion of warm Pacific water which occurs every summer and to measure acoustic scattering from biological layers. (Modified author abstract) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 779 338 8/3 8/7 8/10 4/2
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION MIAMI FLA
ATLANTIC OCEANOGRAPHIC AND METEOROLOGICAL LABS

Collected Reprints-1972. Volume II. (U)

JUL 73 486P

UNCLASSIFIED REPORT
Availability: Paper copy available from GPO $4.05 as C52.23:972/2.

DESCRIPTORS: *Oceanographic data, *Marine meteorology, *Atlantic Ocean, *Air water interactions, Hydrographic surveying, Ocean bottom topography, Coastal regions, Ocean surface, Surface temperature, Ocean currents, Marine geology, Marine geophysics, Scientific research, Reports (U)

Volume II contains a collection of reprints of research completed by NOAA's oceanographic and meteorological laboratory for 1972. Topics discussed fall under the headings of marine geophysics and geology, and air water interactions. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 779 337 8/3 8/7 8/10 4/2
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION MIAMI FLA
ATLANTIC OCEANOGRAPHIC AND METEOROLOGICAL LABS

Collected Reprints-1972. Volume I. (U)

JUL 73 542P

UNCLASSIFIED REPORT
Availability: Paper copy available from GPO $4.45 as C52.23:972/2.
SUPPLEMENTARY NOTE: See also report dated Jul 73, AD-779 338.

DESCRIPTORS: *Oceanographic data, *Marine meteorology, *Atlantic Ocean, Coastal regions, Engineering, Ocean currents, Surface temperature, Sea water, Marine geophysics, Marine geology, Air water interactions, Scientific research, Reports (U)

Volume I contains a collection of reprints of research completed by NOAA's Oceanographic and meteorological laboratory for 1972. Topics discussed fall under the headings of physical oceanography and marine meteorology. (U)

AD- 779 243 8/1
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Radiolaria in Surface Sediments of the South Atlantic, (U)

AUG 73 41P Goll,Robert M. ;Bjorklund, Kjell R. ;
REPT. NO. LDGO-2049
CONTRACT: N00014-67-A-0108-0004, NSF-GA-35454
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Micropaleontology, v20 n1 p38-75 Jan 74.
SUPPLEMENTARY NOTE: Prepared in cooperation with Bergen Univ. (Norway).

DESCRIPTORS: *Radiolaria, *Sediments, *South Atlantic Ocean (U)

The abundance and distribution of Radiolaria are analyzed for 456 core tops from the South Atlantic and the Atlantic sector of the Antarctic Ocean and are compared with the abundance and distribution of surface nutrients and of dissolved silicate throughout the water column, and with lithology. (Modified author abstract) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 778 619 8/3 13/2 9/2
ENVIRONMENTAL PREDICTION RESEARCH FACILITY (NAVY) MONTEREY CALIF

A Multilayer Hydrodynamical-Numerical Model (W. Hansen Type): Model Description and Operating/Running Instructions. Part 2. (U)

DESCRIPTIVE NOTE: Technical note,
JAN 74 58P Laevastu,Taivo ;
REPT. NO. ENVPREDRSCHF-tech note-2-74, EPRF-TN-11

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Part 1, AD-778 609, and Part 3, AD-778 610.

DESCRIPTORS: *Oceanography, *Hydrodynamics, *Mathematical models, FORTRAN, Computer programs, Finite difference theory, Ocean tides, Ocean currents, Wind, Coastal regions, Water pollution, Dispersing, Diffusion, Transport properties (U)
IDENTIFIERS: NYAREA computer programs (U)

The multilayer Hydrodynamical-Numerical (HN) model (W. Hansen type) is, in many respects, similar to Hansen's single-layer HN model. The hydrodynamical formulas present vertically integrated motion through given layers. The lower layer is partly driven by friction, which is proportional to the mean density relations of the layers, and partly by horizontal pressure gradients caused by the inclination of the surface as well as of the interface. The finite difference forms are similar to those used in single-layer models, except for the additional terms dictated by the second layer. The model uses a continuity equation in its direct, physically simple and correct form. Besides the basic formulas of the model, this report describes the numerical model in FORTRAN. The description of the input parameters, abbreviations used, and the program itself are given in the Appendixes. (Modified author abstract) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 778 617 8/3 13/2 9/2
ENVIRONMENTAL PREDICTION RESEARCH FACILITY (NAVY) MONTEREY CALIF

Computation of Tides, Currents, and Dispersal of Pollutants in the New York Bight from Block Island to Atlantic City with Large Grid Size, Single and Two-Layer Hydrodynamical-Numerical Models. Part 4. (U)

DESCRIPTIVE NOTE: Technical note,
JAN 74 89P Laevastu,T. ;Callaway,R. ;
Stroud,A. ;Clancy,M. ;
REPT. NO. ENVPREDRSCHF-tech note-4-74, EPRF-TN-13

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Part 3, AD-778 610.

DESCRIPTORS: *Oceanography, *Hydrodynamics, *Mathematical models, *New York, *Water pollution, Coastal regions, Ocean tides, Ocean currents, Wind, Dispersing, Diffusion, Transport properties (U)

The application of a large grid HN model to the New York Bight is to large extent a problem of treating two long open boundaries. The input at these open boundaries serves also for tuning of the results inside the computational area. A few earlier current measurements by two lightships in the Bight as reported by Haight (1942) have been used for verification. The tidal currents predominate in the New York Bight proper, with a superimposed slow net flow toward the south. This net flow can be simulated in the models and tuned with the prescription of a proper slope to the two open boundaries. (Modified author abstract) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 778 610 8/3 13/2 9/2
ENVIRONMENTAL PREDICTION RESEARCH FACILITY (NAVY) MONTEREY CALIF

Computation of Tides, Currents and Dispersal of Pollutants in Lower Bay and Approaches to New York with Fine Medium Grid Size Hydrodynamical-Numerical Models. Part 3. (U)

DESCRIPTIVE NOTE: Technical note,
JAN 74 59P Laevastu,T. ;Clancy,M. ;
Stroud,A. ;
REPT. NO. ENVPREDRSCHF-tech note-3-74, EPRF-TN-12

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Part 2, AD-778 619, and Part 4, AD-778 617.

DESCRIPTORS: *Oceanography, *Hydrodynamics, *Mathematical models, *New York, *Water pollution, Coastal regions, Ocean tides, Ocean currents, Wind, Dispersing, Diffusion, Transport properties (U)
IDENTIFIERS: New York Harbor (U)

The report summarizes the results of two different HN model applications with different grid sizes: one with a small grid size for the Lower Bay of New York; and the second with a larger grid size for the Approaches to New York, which includes part of the New York Bight outside the Ambrose Channel. (Modified author abstract) (U)

AD- 778 609 8/3 13/2 9/2
ENVIRONMENTAL PREDICTION RESEARCH FACILITY (NAVY) MONTEREY CALIF

A Vertically Integrated Hydrodynamical-Numerical Model (W. Hansen Type): Model Description and Operating/Running Instructions. Part 1. (U)

DESCRIPTIVE NOTE: Technical note.
JAN 74 66P
REPT. NO. ENVPREDRSCHF-tech note-1-74, EPRF-TN-10

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Part 2, AD-778 619.

DESCRIPTORS: *Oceanography, *Hydrodynamics, *Mathematical models, FORTRAN, Computer programs, Finite difference theory, Ocean tides, Ocean currents, Wind, Coastal regions, Water pollution, Drift, Diffusion, Transport properties (U)
IDENTIFIERS: FORTRAN 2 programming language, NYBIGHT computer program (U)

The report presents an operational description of the single-layer vertically integrated Hydrodynamical-Numerical (HN) model. The model is an adaptation of one developed by Professor Walter Hansen, University of Hamburg, and tested over the course of two decades. The description includes the setting up of the model for a given area and the selection and preparation of input data. A brief background of the hydrodynamical formulas and their finite difference forms are also presented. For coastal applications, it is now possible to run the model with three open boundaries. Another new feature makes possible the inclusion of the permanent (thermohaline component) current as well as tidal and wind currents. The transport and diffusion equation is included in the new program. Thus, the program can be used for computing the distribution of pollutants. The program (see Appendix C) is written in FORTRAN and thus will run on almost any computer. (Modified author abstract) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 778 382 13/10
NAVAL INTELLIGENCE SUPPORT CENTER WASHINGTON D C TRANSLATION DIV

The CHERNOMOR-2 Underwater Oceanology Laboratory, (U)

JAN 74 12P Borovikov,P. A. ;Brovko,V. P. ;Podrazhanskii,A. M. ;Stepanov,G. A. ; Yastrebov,V. S. ;
REPT. NO. NISC-Trans-3508

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. of mono. Podvodnaya Okeanologicheskaya Laboratoriya 'CHERNMOR-2', Moscow, n.d. p2-11, pub. by Akademiya Nauk SSSR. Institut Okeanologii, no. 2737-71.

DESCRIPTORS: *Oceanography, *Marine engineering, Laboratory equipment, Laboratories, Underwater, USSR, Translations (U)
IDENTIFIERS: *Chernomor manned submersible (U)

In the Summer of 1969 the P.P. Shirshov Institute of Oceanology of the USSR Academy of Sciences carried out a series of oceanographic investigations using the underwater laboratory of the Institute, CHERNOMOR-2. In the course of the investigations, a crew of four aquanauts stayed underwater at a depth of 25 meters for 14 days. Decompression which was conducted directly in the underwater laboratory upon completion of the crew's activity lasted for 39 hours. In the process of conducting underwater investigations, divers from the crew spent 2.5 to 3.5 hours each in the water. The successful completion of the 1969 scientific program with the use of the CHERNOMOR-2 underwater laboratory confirms the correctness of the chosen design of the underwater laboratory systems. (U)

AD- 778 128 8/10 8/3 8/1
OREGON STATE UNIV CORVALLIS SCHOOL OF OCEANOGRAPHY

Compilation of Reprints, (U)

FEB 74 64P Hager,S. W. ;Atlas,E. L. ;Gordon,L. I. ;Cutchin,D. L. ;Smith,R. L. ;

REPT. NO. Ref-72-24, Ref-73-10
CONTRACT: N00014-67-A-0369-0007
PROJ: NR-083-102

UNCLASSIFIED REPORT
Availability: Pub. in various jnls.
SUPPLEMENTARY NOTE: Also includes Rept nos. Ref-73-13, Ref-73-14, Ref-73-17, and Ref-73-19.

DESCRIPTORS: *Water chemistry, *Ocean waves, *Bathythermograph data, *Marine biology, Arctic Ocean, Oceanographic equipment, Aquatic animals, Oregon, Continental shelves, Solutions(Mixtures), Carbon dioxide, Sea water (U)
IDENTIFIERS: Water analysis, Nutrients, Dissolved zone, North Pacific Ocean (U)

;Contents: A comparison at sea of manual and autoanalyzer analyses of phosphate, nitrate, and silicate; Continental shelf waves: low frequency variations in sea level and currents over the Oregon Continental Shelf; Microstructure anomalies in the Arctic Ocean; A sample changer for automated seawater nutrient analysis systems; Carbon dioxide partial pressures in North Pacific surface waters--general late summer distribution; Scattering layers and vertical distribution of oceanic animals off Oregon. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 777 934 8/7
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Stratigraphic-Seismic Section Correlation and Implications to Bengal Fan History, (U)

74 13P Moore,David G. ;Curray, Joseph R. ;Raitt,Russel W. ;Emmel,Frans J. ;

CONTRACT: N00014-69-A-0200-6006

UNCLASSIFIED REPORT
Availability: Pub. in Initial Reports of the Deep Sea Drilling Project, v22 p403-412 1974.
SUPPLEMENTARY NOTE: Prepared in cooperation with Naval Undersea Research and Development Center, San Diego, Calif.

DESCRIPTORS: *Indian Ocean, *Structural geology, Stratigraphy, Cores, Geologic age determination (U)
IDENTIFIERS: Bengal Bay (U)

Two drilling sites were proposed in the Bay of Bengal in areas of anomalously thin section as determined by earlier seismic work. Although possibilities for characterizing the sediments in the normal thick section of the Bengal Fan were precluded, these holes were, nevertheless, successful in determining the ages of two unconformity-refracting horizons which had been traced throughout the entire bay. (Modified author abstract) (U)

AD- 777 933 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

On the Flow of Water through the Samoan Passage. (U)

JUL 73 20P Reid,Joseph L. ;Lonsdale, Peter F. ;
CONTRACT: N00014-69-A-0200-6006

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Physical Oceanography, v4 n1 p58-73 Jan 74.
SUPPLEMENTARY NOTE: Revision of report dated 16 May 73.

DESCRIPTORS: *Ocean currents, *South Pacific Ocean, Fluid flow, Bathymetry, Deep water, Ocean bottom, Temperature, Hydrographic surveying, Salinity, Depth finding, Density, Measurement (U)
IDENTIFIERS: Samoan Passage, North Tokelau Basin (U)

The Samoan Passage at about 10S, 169W appears to be the major channel through which the deep and abyssal waters flow northward from the South Pacific. The northward flow, postulated from the distribution of characteristics, is confirmed by direct measurements of the currents. The density field and the water characteristics are consonant with an intensified deep western boundary current, whose quasi-geostrophic balance requires the densest water to lie shallowest on the western side of the Samoan Basin, and from which it appears to cascade suddenly into the deeper waters of the North Tokelau Basin. The density field and the water characteristics are also consonant with a southward flowing western boundary current lying immediately above the abyssal flow. (Modified author abstract) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 777 927 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Vertical Structure of Semi-Diurnal Tidal Currents in the Bay of Biscay. (U)

DESCRIPTIVE NOTE: Technical rept.,
MAR 73 7P Gould,W. J. ;McKee,W. D. ;
REPT. NO. WHOI-74-22, WHOI-Contrib-3020
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT
Availability: Pub. in Nature, v244 n5411 p88-91, 13 Jul 73.
SUPPLEMENTARY NOTE: Revision of report dated 23 Feb 73. Prepared in cooperation with National Institution of Oceanography, Wormley (England) and Monash Univ., Clayton (Australia). Dept. of Mathematics.

DESCRIPTORS: *Ocean currents, *Ocean tides, North Atlantic Ocean (U)
IDENTIFIERS: *Biscay Bay (U)

Velocity data from six current meters on a single mooring in the Bay of Biscay were analyzed for vertical modal structure of the semi-diurnal internal tides. The S2 tide has 70% of its energy in the first baroclinic mode and less than 10% in the barotropic mode, while the M2 tide has 50% to 60% of its energy in the barotropic mode. Good agreement with theoretical predictions was obtained for the shapes, orientations and phases of the M2 tidal ellipses. (Author) (U)

AD- 777 905 8/1 8/3 8/10
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Littoral of Kola Bay (Litoral Kilskogo Zaliva), (U)

74 17P Gurvanova,E. ;Saks,I. ; Ushakov,P. ;
REPT. NO. . NOO-T-9

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. of Akademiya Nauk SSSR. Murmanskaya Biologicheskaya Stantsiya, Dalnie Zelentsy. Raboty, v1 p91-107 1925, by M. Siessers.

DESCRIPTORS: *Marine biology, *Oceanographic data, *Arctic Ocean, Tides, Algae, Salinity, Ocean bottom topography, Coastal regions, Morphology, Aquatic plants, Aquatic animals, Aquatic organisms, Translations, USSR (U)
IDENTIFIERS: *Kola Bay, *Littoral zone (U)

Investigations conducted in the littoral zone of Kola Bay during 1921-1923 are briefly discussed. The observed results are compared with data given by other researchers. The effects of the type of coast, intensity of surf, composition of bottom, slope, salinity of water and other factors on the composition and distribution of marine fauna and flora are pointed out, listing the major organisms and giving data on the distribution and density of populations. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 777 636 8/10
LEHIGH UNIV BETHLEHEM PA MARINE GEOTECHNICAL LAB

Some Chemical, Mineralogical, and Geotechnical Analyses of Four Cores from the Wilkinson Basin. (U)

DESCRIPTIVE NOTE: Rept. for 1969-70,
JAN 73 7P Parker,Andrew ;
CONTRACT: N00014-67-A-0370-0005
PROJ: NR-083-248

UNCLASSIFIED REPORT
Availability: Pub. in Deep-Sea Research, v20 p551-554 1973.
SUPPLEMENTARY NOTE: Revision of report dated 4 Dec 72.

DESCRIPTORS: *Ocean bottom, *Marine Gulf, *Cores, Mineralogy, Chemical composition, Sediments, Shear strength (U)
IDENTIFIERS: Wilkinson Basin (U)

Studies have been made of the bulk chemistry and mineralogy of four clay cores from the Wilkinson Basin, Gulf of Maine, in an attempt to explain their geotechnical properties. Correlations between geochemistry and shear strength and sensitivity are low. (Author) (U)

AD- 777 566 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Mesoscale Ocean Eddies in the North Pacific: Westward Propagation, (U)

OCT 73 5P Bernstein,Robert L. ;
CONTRACT: N00014-69-A-0200-6043

UNCLASSIFIED REPORT
Availability: Pub. in Science, v183 p71-72, 11 Jan 74.
SUPPLEMENTARY NOTE: Revision of report dated 20 Aug 73.

DESCRIPTORS: *Ocean currents, *Pacific Ocean, Perturbations, Circulation, Surface temperature, Oceanographic data (U)
IDENTIFIERS: *North Pacific Ocean (U)

A set of subsurface temperature measurements in the trade wind region northeast of Hawaii reveals large perturbations about the mean state, with zonal wavelengths of 480 kilometers. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 777 553 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Further Studies of Temporal Coherence in North Pacific Sea Surface Temperatures, (U)

OCT 73 5P Namias,Jerome ;Born,Robert M. ;
CONTRACT: N00014-69-A-0200-6043

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v79 n6 p797-798, 20 Feb 74.
SUPPLEMENTARY NOTE: Revision of report dated 17 Aug 73.

DESCRIPTORS: *Oceanographic data, *Surface temperature, *Pacific Ocean, Anomalies, Seasonal variations, Correlation techniques (U)
IDENTIFIERS: *North Pacific Ocean (U)

Temporal coherence between monthly mean space-averaged sea surface temperature anomalies over the North Pacific is appreciably greater than pattern coherence, and thus some conservatism of anomalies as they are redistributed by the North Pacific Ocean gyres is indicated. When they are stratified by initial month, autocorrelations show strong recurrence from one nonsummer month to subsequent months out to two years except for summer. The autocorrelations drop between May and June and rise between September and October, changes which appear to be related to wind strength and wind mixing in the oceanic surface layers. (Author) (U)

AD- 777 401 8/10
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Marine Geophysical Survey (1965-1968) Station-Data Listing and Report Catalog. (U)

DESCRIPTIVE NOTE: Special publication, MAR 74 85P Chanesman,Stanley ;Kaufman, Oscar ;
REPT. NO. NOO-SP-142

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *North Atlantic Ocean, *Pacific Ocean, *Catalogs, Bibliographies (U)
IDENTIFIERS: *North Pacific Ocean (U)

The report is a catalog of collected Marine Geophysical Survey (MGS) data and published MGS reports. It lists the types of measurements (acoustic, oceanographic, and geophysical) made at 1,182 stations in the North Atlantic and North Pacific Oceans during the MGS Program 1965-1968. Published MGS task area reports are also briefly described. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 777 397 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Direct Measurements of Turbulence in the Pacific Equatorial Undercurrent, (U)

AUG 73 7P Williams,Robert B. ;Gibson, Carl H. ;
CONTRACT: N00014-69-A-0200-6000, DAHC04-72-C-0037
MONITOR: AROD 10757.29-P

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Physical Oceanography, v4 n1 p104-108 Jan 74.
SUPPLEMENTARY NOTE: Sponsored in part by contracts N00014-69-A-0200-6002 and N00014-69-A-0200-6039. Revision of report dated 27 Jun 73.

DESCRIPTORS: *Ocean currents, *Pacific Ocean, Temperature, Measurement, Thermoclines, Heat flux, Diffusion, Buoyancy, Friction, Turbulence (U)
IDENTIFIERS: Equatorial currents (U)

Measurements of small-scale fluctuations of temperature are used to estimate turbulent parameters such as viscous dissipation rate (epsilon), dissipation rate of temperature variance (chi), and turbulent diffusion coefficients of momentum (nu sub T) and temperature (D sub T). Results from two locations are reported: one in the center of the undercurrent (0N 150W) and one toward the northern edge (1N 150W); both at depths of about 100 m where high vertical shear and high vertical stability are found. Universal similarity and local isotropy assumptions were used to determine the dissipation rates from measured spectra. (Modified author abstract) (U)

AD- 776 877 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Relict Carbonate-Rich Sediments on Southwestern Grand Bank, Newfoundland. (U)

DESCRIPTIVE NOTE: Technical rept.,
AUG 73 11P Milliman,John D. ;Mueller, Jens ;
REPT. NO. WHOI-74-14, WHOI-Contrib-3129
CONTRACT: N00014-66-C-0241, DI-14-08-0001-10875

UNCLASSIFIED REPORT
Availability: Pub. in Canadian Jnl. of Earth Sciences, v10 p1744-1750 1973.
SUPPLEMENTARY NOTE: Revision of report dated 20 Jun 73. Prepared in cooperation with Technische Universitat, Muenchen (West Germany). Institut fuer Geologie.

DESCRIPTORS: *Sediments, *North Atlantic Ocean, Newfoundland(Province), Carbonate minerals, Sedimentation, Petrology, Ocean bottom (U)
IDENTIFIERS: Grand Bank (U)

The paper deals with the nature and origin of the carbonate-rich sediments on the southwestern part of Grand Bank off Newfoundland, Canada. This occurrence is particularly anomalous in light of the carbonate-poor sediments that occur in the warmer waters to the south and in light of the previously proposed late Quaternary history of the area. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 776 686 8/7
ROSENSTIEL SCHOOL OF MARINE AND ATMOSPHERIC SCIENCE MIAMI FLA

Sedimentary Serpentinites from the Mid-Atlantic Ridge, (U)

FEB 73 9P Bonatti,Enrico ;Honnorex, Jose ;Gartner,Stefan , Jr;
REPT. NO. Contrib-1648
CONTRACT: N00014-67-A-0201-0013, NSF-GA-25163

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Sedimentary Petrology, v43 n3 p728-735 Sep 73.
SUPPLEMENTARY NOTE: Revision of report dated 24 Jul 72.

DESCRIPTORS: *Ocean ridges, *Atlantic Ocean, Sedimentary rock, Petrology, Sedimentation (U)
IDENTIFIERS: Romanche Fracture Zone, Serpentinite, MidAtlantic Ridge (U)

Indurated sedimentary rocks with serpentine minerals as major components were recovered from the lower slopes of transverse ridges associated with the Romanche Fracture Zone in the equatorial Mid-Atlantic Ridge. In addition to serpentine minerals, sedimentary serpentinites from the Mid-Atlantic Ridge contain grains of diopside, enstatite, tremolite, chlorite, calcite and, frequently, calcareous microfossils: some samples display layering and graded bedding. These sedimentary serpentinites were emplaced by gravity sliding, slumping and turbidity current transport of serpentinite masses originating from the upper levels of ultramafic transverse ridges at the Romanche Fracture. Chemical and mineralogical differences between the sedimentary serpentinites and their ultramafic source rocks are discussed. The rocks in question are identical to sedimentary serpentinites common in alpine-type orogenic areas of the world. (Author) (U)

AD- 776 605 8/7 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

The History of Sedimentation and Abyssal Circulation on the Greater Antilles Outer Ridge. (U)

DESCRIPTIVE NOTE: Technical rept.,
JAN 74 318P Tucholke,Brian E. ;
REPT. NO. WHOI-74-1
CONTRACT: N00014-66-C-0241, NSF-GA-24872
PROJ: NR-083-004

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean ridges, *North Atlantic Ocean, *Sedimentation, Theses, Ocean currents, Marine geology, Geologic age determination (U)
IDENTIFIERS: *Greater Antilles Outer Ridge, Western Boundary Undercurrent, Antarctic Bottom Water (U)

The study arose during an investigation of the sediments of the Greater Antilles Outer Ridge, which in initial research were determined to be abyssal brown lutites of dominantly terrigenous derivation interbedded with occasional calcareous lutites. The origin of this accumulation of sediment and the geologic evolution of the Greater Antilles Outer Ridge was chosen as the topic of this research effort. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 776 446 8/7 8/14
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Detailed Magnetic Surveys in the Northeast Atlantic and Labrador Sea, (U)

AUG 73 30P Vogt,P. R. ;Avery,O. E.
;
PROJ: RR131-03, NR-083-284
TASK: RR131-03-01

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v79 n2 p363-389, 10 Jan 74.
SUPPLEMENTARY NOTE: Revision of report dated 21 Jul 72.

DESCRIPTORS: *Magnetic anomalies, *North Atlantic Ocean, *Structural geology, Oceanographic data (U)
IDENTIFIERS: *Ocean bottom spreading, Plate tectonics (U)

In recent years, extensive close-spaced magnetic surveying by vessels of the U.S. Naval Oceanographic Office has augmented an already large data base to provide new insights into the details of sea floor spreading in the North Atlantic. The authors present results of preliminary analyses of the residual magnetic field disclosed by a survey between Reykjanes ridge and Rockall trough and a smaller survey near the junction of the Labrador Sea and the Atlantic Ocean. (U)

AD- 776 243 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Sea Floor Geothermal Measurements from Vema Cruise 26. (U)

DESCRIPTIVE NOTE: Final technical rept. Jul 68-May 69,
JAN 74 205P Langseth,Marcus G. , Jr.;
Malone,Isabel ;Ongley,Lois K. ;Fiske,R.
John , III;Bookman,Charles A. ;
CONTRACT: N00014-67-A-0108-0004, NSF-GA-1412
PROJ: NR-083-142

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Cruise 25, AD-748 309.

DESCRIPTORS: *Atlantic Ocean, *Ocean bottom, *Geothermy, Deep water, Sediments, Sea water, Heat flux, Thermal conductivity, Oceanographic data, Tables(Data) (U)
IDENTIFIERS: Jema vessel (U)

The report presents geothermal data representing 105 stations in the Atlantic Ocean. This material includes deep water and sediment temperatures as well as conductivity measurements from sediment cores. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 776 206 8/1
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Productivity of the Barents Sea Coast (Produktivnost Pribrezhya Barentseva Morya). (U)

74 11P Kamshilov,M. M. ;
REPT. NO. NOO-T-3

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. of Akademiya Nauk SSSR. Karelskii Filial, Petrozavodsk. Izvestiya Karolskogo i Kolskogo Filialov, n1 p84-89 1957, by v. Astvazaturov.

DESCRIPTORS: *Marine biology, *Arctic Ocean, Plankton, Coastal regions, Fishes, Aquatic animals, Natural resources, Translations, USSR (U)
IDENTIFIERS: *Barents Sea, *Primary biological productivity, Littoral zone (U)

Detailed investigations of the Murmansk littoral zone were made for a five-year period by the Murmansk Biological Station to determine the biological productivity of the region for possible further commercial exploitation. More efficient use of existing marine biological resources was discussed, such as developing managed, cultivated marine farms. Exploitation of marine resources of regions further removed from the Barents Sea coast was discussed. (Author) (U)

AD- 776 197 8/10 8/3
MASSACHUSETTS INST OF TECH CAMBRIDGE

Oceanographic Research at M.I.T. in the Department of Earth and Planetary Sciences and the Department of Meteorology. (U)

DESCRIPTIVE NOTE: Annual rept. 1 Jan-31 Dec 73,
MAR 74 31P Atwater,Tanya ;Beardsley, Robert C. ;Edmond,John M. ;Press,Frank ; Sclater,John G. ;
REPT. NO. 74-1
CONTRACT: N00014-67-A-0204-0048
PROJ: NR-083-157

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated Mar 73, AD-757 734.

DESCRIPTORS: *Oceanographic data, *Reports, Scientific research, Ocean currents, Indian Ocean, Ocean bottom topography, Marine geology, Sediment transport, Structural geology, Marine geophysics, Gravity, Geomagnetism (U)
IDENTIFIERS: Plate tectonics (U)

Contents: Ocean physics; Ocean circulation model studies; Observations of the Equatorial undercurrent in the Indian Ocean; Ocean bottom pressure fluctuations; Mechanics of bottom sediment movement; Marine geochemistry; Marine magnetism; Structural evolution of an oceanic plate; Marine geophysics; Marine gravity. (U)

AD- 775 961 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Abyssal Circulation Over the Greater Antilles Outer Ridge, (U)

JUN 73 27P Tucholke,Brian E. ;Wright, W. R. ;Hollister,Charles D. ;
REPT. NO. WHOI-74-16
CONTRACT: N00014-66-C-0241, NSF-GA-24872
PROJ: NR-083-004

UNCLASSIFIED REPORT
Availability: Pub. in Deep-Sea Research, v20 p973-995 1973.

DESCRIPTORS: *Ocean currents, *North Atlantic Ocean, Hydrographic surveying, Ocean bottom topography (U)

Data from hydrographic stations, current measurements of four to six months' duration, and bottom photographs are used to infer the pattern of abyssal circulation in the vicinity of the Greater Antilles Outer Ridge north of Puerto Rico. A deep contour-following current of Antarctic Bottom Water with a small admixture of North Atlantic Deep Water flows southeast along the Bahama Banks, counterclockwise around the Silver Abyssal Plain, clockwise around the northwest end of the Greater Antilles Outer Ridge and then eastward along the north flank of the ridge. The Antarctic Bottom Water enters the basin of the Hatteras Abyssal Plain through Vema Gap, flows counterclockwise around the abyssal plain and then south along the lower continental rise into the region of the Greater Antilles Outer Ridge as a deep extension of the Western Boundary Undercurrent. This deep circulation pattern may provide a mechanism by which terrigenous detritus from the North American continental margin has been transported to the southeast and deposited to form the Greater Antilles Outer Ridge. (Author) (U)

AD- 775 735 8/3
PHYSICAL DYNAMICS INC BERKELEY CALIF

Energy Spectra of the Ocean Surface: II. Interaction with Surface Current. (U)

DESCRIPTIVE NOTE: Semi-annual technical rept., OCT 73 67P Watson,Kenneth M. ;West, Bruce J. ;Cohen,Bruce I. ;
REPT. NO. PD-73-037
CONTRACT: F30602-72-C-0494, ARPA Order-1649
MONITOR: RADC TR-74-15

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated Feb 73, AD-759 541.

DESCRIPTORS: *Ocean waves, *Ocean currents, *Ocean surface, Wave equations, Equations of motion, Interactions, Linearity, Surface waves, Gravity waves, Internal waves (U)

The linear interaction equations between surface gravity waves and a surface current is reviewed. These equations are cast in the form of coupled eigenmode equations which are first order in time and can be solved numerically. The solutions to these coupled equations provide one with a view as to how a specified spectrum of surface waves is modified by a surface current. This analysis extends that in RADC-TR-73-74 (PD-72-030). It is found that the interaction regimes of tank experiments and ocean experiments can be quite different so that information obtained from the former does not necessarily provide information about the latter. (Author) (U)

AD- 775 659 8/3
RHODE ISLAND UNIV KINGSTON GRADUATE SCHOOL OF OCEANOGRAPHY

The Observed Decay of a Cyclonic Gulf Stream Ring. (U)

DESCRIPTIVE NOTE: Technical rept., MAR 74 144P Cheney,Robert E. ;
Richardson,Philip L. ;
REPT. NO. Ref-74-2
CONTRACT: N00014-68-A-0215-0003

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean currents, *Gulf Stream, Decay, Eddy currents, Cyclones, Atlantic Ocean (U)

A cyclonic Gulf Stream ring was tracked in the western Sargasso Sea for 14 months from March 1971 to April 1972. The ring moved 700 km to the southwest at a rate of 2 km/day and was believed to have coalesced with the Gulf Stream off of Cape Canaveral. The study presented here is an investigation of the decay of the ring over the last 11 months of its life. (Modified author abstract) (U)

AD- 775 515 8/10
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

R/V 'Thomas G. Thompson' Cruise TT-086. Subtropical Front of the Central North Pacific 7 January to 10 February 1974. (U)

DESCRIPTIVE NOTE: Preliminary rept., FEB 74 8P Roden,Gunnar I. ;
REPT. NO. Ref-M74-14
CONTRACT: N00014-67-A-0103-0014
PROJ: NR-083-012

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Pacific Ocean, Thermoclines, Salinity (U)
IDENTIFIERS: North Pacific Ocean (U)

The objective of this cruise was to study the thermohaline structure in the subtropical front region of the central North Pacific. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 775 381 8/12
COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER N H

Investigations Performed on the Arctic Ice Dynamics Joint Experiment March 1971. (U)

DESCRIPTIVE NOTE: Research rept., DEC 73 67P Ackley,S. F. ;Hibler,W. D. , III;Kovacs,A. ;Weeks,W. F. ;Hartwell, A. ;
REPT. NO. CRREL-RR-315
CONTRACT: ARPA Order-1615

UNCLASSIFIED REPORT

DESCRIPTORS: *Arctic Ocean, *Sea ice, Dynamics, Strain(Mechanics), Pack ice, Topography, Deformation (U)
IDENTIFIERS: *Beaufort Sea (U)

;Contents: Mesoscale strain measurements on the Beaufort Sea pack ice; Structure of a multiyear pressure ridge; Top and bottom roughness of a multiyear ice floe; Airphoto analysis of ice deformation in the Beaufort Sea; Data on morphological and physical characteristics of sea ice in the Beaufort Sea. (U)

AD- 775 349 8/7
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Geophysical Study of Antilles Outer Ridge, Puerto Rico Trench, and Northeast Margin of Caribbean Sea, (U)

JUN 73 18P Bunce,E. T. ;Phillips,J. D. ;Chase,R. L. ;
REPT. NO. WHOI-74-7, WHOI-Contrib-2897
CONTRACT: N00014-66-C-0241, NSF-GA-27516
PROJ: NR-083-004

UNCLASSIFIED REPORT

Availability: Pub. in The American Association of Petroleum Geologists Bulletin, v58 n1 p106-123 Jan 74.
SUPPLEMENTARY NOTE: Prepared in cooperation with British Columbia Univ., Vancouver.

DESCRIPTORS: *Caribbean Sea, *Ocean ridges, *Structural geology, Magnetic anomalies, Seismic reflection (U)
IDENTIFIERS: *Plate technics (U)

New seismic and magnetic information from the Antilles Outer Ridge and Trench region has been combined with previous geophysical observations to provide an explantation for the origin of the crust there, in the framework of plate tectonics. This suggests that the ridge was formed at the junction of two ancient oceanic plates which accreted as Africa separated from North America and South America, respectively. (Modified author abstract) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 775 333 8/3
ROSENSTIEL SCHOOL OF MARINE AND ATMOSPHERIC SCIENCE MIAMI FLA

CHURCH GABBRO Technical Note: Continuous Current Profiles, (U)

JAN 74 342P Daubin,Scott C. ;
REPT. NO. UM-RSMAS-74002
CONTRACT: N00014-67-A-0201-0024
PROJ: NR-292-117

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Report on Long Range Acoustic Propagation Project.

DESCRIPTORS: *Caribbean Sea, *Ocean currents, Deep water, Statistical data, Power spectra (U)

Deep ocean current profiles are reported from a position in the Cayman Trough of the Caribbean, covering the depths between 850 and 4833 meters and at hourly intervals during the time period 30 November 1972 through 11 Dec 1972. The profiles were derived from measurements made by 53 inclinometers which were integral with a moored, compliant acoustic array. The profiles are displayed as an isometric set and individually. Time series current data from each instrument location along the line and their power spectra are presented. Profiles of estimated geostrophic current components are also shown. There is evidence of a more or less steady northwesterly current of between 3 and 8 cm/sec at mid-depths, and an intermittent westerly bottom current of 7 cm/sec. (Modified author abstract) (U)

AD- 775 254 8/3
FLORIDA STATE UNIV TALLAHASSEE MESOSCALE AIR-SEA INTERACTION GROUP

The Influence of Coastline Geometry and Bottom Topography on the Eastern Ocean Circulation. (U)

DESCRIPTIVE NOTE: Technical rept.,
JAN 74 116P Hurlburt,Harley E. ;
REPT. NO. 117
CONTRACT: N00014-67-A-0235-0002, NSF-GA-29734
PROJ: NR-083-231

UNCLASSIFIED REPORT

DESCRIPTORS: *Upwelling, *Ocean currents, *Ocean bottom topography, Mathematical models, Coastal regions, Pacific Ocean, Wind (U)

An important feature of the eastern ocean circulation is coastal upwelling. Associated with the upwelling is an equatorward surface jet and a poleward undercurrent. The present investigation focuses attention on the effects longshore variations in bottom topography and coastline geometry have on these phenomena. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 775 250 8/10
OREGON STATE UNIV CORVALLIS SCHOOL OF OCEANOGRAPHY

Chemical Data from Oregon Waters 1972, (U)

SEP 73 126P Tomlinson,Richard D. ; Barstow,Lynda ;Standley,David R. ;Williams, Suelynn ;Gordon,Louis I. ;
REPT. NO. Ref-73-15, Data-56
CONTRACT: N00014-67-A-0369-0007, NSF-GA-12113
PROJ: NR-083 102

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Oregon, *Coastal regions, Pacific Ocean, Salinity, Oxygen, Phosphorus, Carbon dioxide, Nitrogen, Silicates (U)
IDENTIFIERS: Nutrients (U)

The report presents data collected on six cruises made during the months May-October 1972 along the Oregon coast. Both complete data listings and sequential surface data contour charts are presented. The latter graphically display rapid changes in surface water characteristics on time scales as short as a few hours. (Modified author abstract) (U)

AD- 774 703 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Penetration of Antarctic Bottom Water from the Cape Basin into the Angola Basin, (U)

SEP 73 9P Connary,Stephen Dodd ;Ewing, Maurice ;
REPT. NO. LDGO-2039
CONTRACT: N00014-67-A-0108-0004, NSF-GA-27281
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v79 n3 p463-469, 20 Jan 74.
SUPPLEMENTARY NOTE: Prepared in cooperation with Texas Univ., Galveston. Medical Branch. Rept. no. Contrib-35.

DESCRIPTORS: *South Atlantic Ocean, *Ocean currents, Deep water, Ocean bottom topography, Temperature, Turbidity (U)

Wust (1936) demonstrated that antarctic bottom water (AABW) enters the Angola basin only along its northern boundary with the Guinea basin and flows southward until it reaches the Walvis ridge. New data on temperature and light scattering near the sea floor indicate that AABW is also flowing into the southwestern Angola basin from the Cape basin via a newly discovered channel. Mixing with the warmer clearer AABW flowing south from the Guinea basin is complete by the time the colder more turbid AABW from the Cape basin reaches 30 degrees S. Particle settling from the nepheloid layer may partially explain the relatively thick sediments in the southwestern Angola basin. (Author) (U)

AD- 774 640 8/7
MASSACHUSETTS INST OF TECH CAMBRIDGE DEPT OF EARTH AND PLANETARY SCIENCES

The Evolution of the Indian Ocean, (U)

73 15P McKenzie,D. P. ;Sclater, J. G. ;
CONTRACT: N00014-67-A-0204-0048
PROJ: NR-083-157

UNCLASSIFIED REPORT
Availability: Pub. in Scientific American, v228 n5 p62-72 May 73.

DESCRIPTORS: *Structural geology, *Indian Ocean, Magnetic anomalies, Ocean ridges (U)
IDENTIFIERS: Plate tectonics (U)

The 75-million-year magnetic record in the floor of the Indian Ocean reveals how India was rafted northward for 5,000 kilometers before it collided with Asia. The encounter gave rise to the Himalayas. (Author) (U)

AD- 774 628 8/10 8/7
MASSACHUSETTS INST OF TECH CAMBRIDGE DEPT OF EARTH AND PLANETARY SCIENCES

Paleobathymetry of the South Atlantic, (U)

APR 73 15P Sclater,John G. ;McKenzie, Dan P. ;
CONTRACT: N00014-67-A-0204-0048
PROJ: NR-083-157

UNCLASSIFIED REPORT
Availability: Pub. in Geological Society of America Bulletin, v84 p3203-3216 Oct 73.
SUPPLEMENTARY NOTE: Prepared in cooperation with Cambridge Univ. (England). Dept. of Geodesy and Geophysics. Revision of report dated 21 Aug 72.

DESCRIPTORS: *South Atlantic Ocean, *Ocean bottom topography, *Structural geology, Ocean ridges, Geologic age determination, Ocean current (U)
IDENTIFIERS: Plate tectonics, *Ocean bottom spreading (U)

Knowledge of the relative motion between South America and Africa since their separation in the Cretaceous and the uniform relation of depth to age for almost all active midocean ridges permits us to reconstruct the paleobathymetry of the South Atlantic. The match between the theoretical and present topography is good except for the aseismic Rio Grande and Walvis Rises. If the history of these two rises is known from drilling, realistic charts of the paleobathymetry of the South Atlantic can be constructed for 35 and 75 m.y. B.P. (Modified author abstract) (U)

AD- 774 503 8/10
COAST GUARD WASHINGTON D C OCEANOGRAPHIC UNIT

Light Vessel/Light Station Oceanographic Observations East of the United States, January-December, 1971. (U)

DESCRIPTIVE NOTE: Oceanographic rept., JUL 73 130P Kangas,Richard E. ;
REPT. NO. USCG-373-59

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also PB-210 179.

DESCRIPTORS: *Oceanographic data, *North Atlantic Ocean, Lighthouses, Bathythermograph data, Salinity, Diurnal variations, Coastal regions, Thermoclines, Boats, United States (U)

Daily water temperatures and salinities for 1971 from 11 locations along the Atlantic coast are presented and discussed. (Author) (U)

AD- 774 346 8/1 6/3
INSTITUTO ESPANOL DE OCEANOGRAFIA MADRID (SPAIN)

Ciclo Anual de la Produccion Primaria y su Relacion con los Nutrientes en Aguas Canarias (Annual Cycle of Primary Production and Its Relationship with Nutrients in Waters off the Canary Islands), (U)

73 27P De Leon,A. R. ;Braun,J. G. ;

UNCLASSIFIED REPORT

Availability: Pub. in Boletin del Instituto Espanol de Oceanografia, n167 p1-24 Mar 73.

SUPPLEMENTARY NOTE: Text in Spanish; summary in English. Errata sheet inserted.

DESCRIPTORS: *Marine biology, *Oceanographic data, Canary Islands, Production, Chlorophylls, Coastal regions, Light transmission, Temperature, Oxygen, Phosphates, Plankton, Nitrites, Nitrates, Silicates, Nutrition, Fishes, Spa (U)

IDENTIFIERS: Santa Cruz de Tenerife, *Primary biological productivity (U)

For 12 months investigations were made at a station situated two miles from the coast, off Santa Cruz de Tenerife, at a depth of 780 m. During this time were measured the primary production, chlorophyll a, light penetration, temperature, oxygen, phosphate, nitrite, nitrate and silicate within the upper 200 m. of the station. (Modified author abstract) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 774 185 8/10
WISCONSIN UNIV MADISON DEPT OF GEOLOGY AND GEOPHYSICS

Late Mesozoic and Early Cenozoic Sediment Cores from the Arctic Ocean. (U)

DESCRIPTIVE NOTE: Technical rept., NOV 73 6P Clark,David L. ;
REPT. NO. Clark-16
CONTRACT: N00014-67-A-0128-0002
PROJ: NR-307-311

UNCLASSIFIED REPORT

Availability: Pub. in Geology, p41-44 Jan 74.

SUPPLEMENTARY NOTE: Revision of report dated 3 Aug 73.

DESCRIPTORS: *Arctic Ocean, *Sediments, Ice islands, Cores, Ocean bottom, Geologic age determination, Paleontology (U)

More than 500 sediment cores have been recovered from the Arctic Basin, using Fletcher's Ice Island (T-3), since 1963. With two exceptions reported herein, the cores studied are of Pliocene and Pleistocene age. The two exceptions are cores 437 and 422, which contain silicoflagellates of Late Cretaceous and Paleocene to Eocene age, respectively. Report of the Cretaceous age of core 437 suggested that this was the oldest sediment--in fact, the only pre-Pliocene sediment known from the Arctic Ocean. This report documents the faunal and lithologic characteristics of core 437, as well as reports on the identification of Paleocene- to Eoceneage material in core 422, the second occurrence of pre-Pliocene sediment in the Arctic Ocean. (U)

AD- 774 117 8/10
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

Some Chemical and Physical Properties of the Eastern Tropical North Pacific with Emphasis on the Oxygen Minimum Layer. (U)

DESCRIPTIVE NOTE: Technical rept.,
OCT 73 49P Codispoti,Louis A. ;
REPT. NO. Ref-M73-64, TR-289
CONTRACT: N00014-67-A-0103-0014, Nonr-477(37)
PROJ: NR-083-012

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Also sponsored in part by Grant NSF-GA-10084, and NSF-GA-24875.

DESCRIPTORS: *Pacific Ocean, *Oceanographic data, Temperature, Salinity, Oxygen, Ocean currents (U)
IDENTIFIERS: North Pacific Ocean, Nutrients (U)

The report is basically an atlas presenting diagrams and charts of temperature, salinity, oxygen, nutrient, and relative baroclinic current data for the eastern tropical North Pacific. Special emphasis is on the oxygen deficient layer in this region and a number of the charts constitute an isentropic study of this layer. Two of the included properties, nitrate deficits and equivalent nitrate, are particularly appropriate for investigations dealing with denitrification in these waters, and the methods for calculating them are described. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 774 115 8/10
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

An Investigation of Mean Temperature Structure and Internal Waves in Puget Sound Central Basin. (U)

DESCRIPTIVE NOTE: Technical rept.,
JUL 73 74P Lovorn,Floyd T. ;
REPT. NO. Ref-M73-49, TR-287
CONTRACT: N00014-67-A-0103-0014

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanographic data, *Puget Sound, Temperature, Pressure, Internal waves, Time series analysis (U)

A description is given of the experiment and the temperature and pressure time-series. Three separate temperature phases are identified--each lasting about 11 days. The last phase is believed to be a lens of warm water intruding from the north, originating, perhaps, in Possession Sound. An attempt is made to estimate the contribution of mooring motion to the temperature signal. The first temperature phase is investigated for the possible presence of internal waves. (Author) (U)

AD- 774 007 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Ganges Cone: A Wide Angle Seismic Reflection and Refraction Study, (U)

JUL 73 14P Naini,Bhoopal R. ;Leyden, Robert ;
REPT. NO. LDGO-1967
CONTRACT: N00014-67-A-0108-0004
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v78 n35 p8711-8720, 10 Dec 73.
SUPPLEMENTARY NOTE: Revision of report dated 25 May 73.

DESCRIPTORS: *Indian Ocean, *Deltas, *Sediments, Ocean bottom, Seismic reflection, Structural geology (U)
IDENTIFIERS: Bengal Bay, Ganges River (U)

A seismic wide angle reflection and refraction survey on the Ganges Cone sediments has indicated an overall layered sediment sequence. Surface layers have indicated depositional features associated with submarine river channels. Structural highs suggest that the 90 degrees E Ridge continues farther north of the present topographic relief, buried under the Ganges Cone sediments. Nine distinct values of velocities have been found throughout the region, each representing one layer. These observations have been compared with oceanic and continental models. Velocity versus depth relation indicates a linear increase of velocity with depth with a gradient of 0.62/sec. Comparison of sediment thickness with a DSDP site on the Ganges Cone suggests that the base of the sediment may extend into Upper Cretaceous. (Modified author abstract) (U)

UNCLASSIFIED

AD- 773 230 8/12 8/10
ARCTIC INST OF NORTH AMERICA WASHINGTON D C

The Occurrence and Characteristics of Nearshore Permafrost, Northern Alaska. (U)

DESCRIPTIVE NOTE: Final rept. 1971-72,
73 8P Lewellen,Robert I. ;
REPT. NO. AINA-ONR-433:1
CONTRACT: N00014-70-A-0219-0001
PROJ: NR-307-105

UNCLASSIFIED REPORT
Availability: Pub. in the Permafrost: The North American Contribution to the International Conference (2nd), p131-136 1973.
SUPPLEMENTARY NOTE: International Stock Book no. 0-309-02115-4.

DESCRIPTORS: *Permafrost, *Ocean bottom, *Arctic Ocean, Alaska, Temperature, Coastal regions (U)
IDENTIFIERS: Beaufort Sea, Chukchi Sea (U)

Permafrost is known to occur under the coastal waters of the Chukchi and Beaufort seas north of Alaska. However, its exact distribution and characteristics are not known. This paper discusses part of a study to determine the distribution and characteristics of the permafrost occurring nearshore from Cape Beaufort to Demarcation Point, Alaska. The approach of the study is to examine the field conditions, to obtain the necessary field measurements, and from them to model the distribution and character of this undersea permafrost. (Author) (U)

AD- 773 218 8/10 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

The Age of the South Atlantic, (U)

73 21P Ladd,John W. ;Pitman, Walter C. , III;Dickson,Geoffrey O. ;
REPT. NO. LDGO-1958
CONTRACT: N00014-67-A-0108-0004, NSF-GA-27281
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in The Ocean Basins and Margins, v1 ch14 p555-573 1973.

DESCRIPTORS: *South Atlantic Ocean, *Marine geology, Magnetic anomalies, Ocean ridges (U)
IDENTIFIERS: Continental drift, Plate tectonics (U)

This paper attempts to delineate the pattern of continental drift that has taken place in the South Atlantic since mid-Mesozoic time. The history presented is based on the analysis of the magnetic anomaly pattern associated with the mid-Atlantic ridge which indicates the age of the basement rock and may be used to determine to a first approximation the pattern of drift between the continental masses that surround the Atlantic. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 772 938 8/10
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Oceanographic Measurements near the Arctic Ice Margins. (U)

DESCRIPTIVE NOTE: Final rept. 15 May 72-30 Nov 73,
DEC 73 94P Paquette,Robert G. ;Bourke, Robert H. ;
REPT. NO. NPS-58PA73121A
PROJ: NPS-PO-2-0054, NPS-PO-3-0035

UNCLASSIFIED REPORT

DESCRIPTORS: *Hydrographic surveying, *Oceanography, *Arctic regions, Oceanographic data, Temperature, Depth, Salinity, Ocean currents, Acoustic velocity (U)
IDENTIFIERS: Oceanographic surveys, Chukchi Sea, Beaufort Sea (U)

Temperature and salinity measurements were made in and near the ice in the Chukchi and Beaufort Seas with a continuously profiling instrument in August of 1971 and 1972 as part of the MIZPAC Program. Warm water of Bering Sea origin was found south of the ice in all of the area surveyed, layered sharply on top of cold water. Complex temperature and sound-velocity profiles were found near the Alaskan Coast north of the ice margin, diminishing in intensity toward the interior of the ice pack but still noticeable 30 miles inside the ice boundary. West of the coastal zone the phenomena were much milder and more quickly damped by the ice. The coastal current was observed to turn, perhaps branch, and flow along the Beaufort Sea slope. (Modified author abstract) (U)

AD- 772 568 8/10
TEXAS A AND M UNIV COLLEGE STATION DEPT OF OCEANOGRAPHY

The Waters of the Eastern Gulf of Mexico as Observed During May 1972. I. Data Collected Aboard the R/V Alaminos. (U)

DESCRIPTIVE NOTE: Data rept.,
MAY 73 335P Morrison,John M. ;Merrell, William J. , Jr.;Nowlin,Worth D. , Jr;
REPT. NO. A/M-Ref-73-10-T
CONTRACT: N00014-68-A-0308-0002
PROJ: A/M-700-5

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: A Contribution to CICAR (Cooperative Investigations of the Caribbean and Adjacent Regions Program).

DESCRIPTORS: *Hydrographic surveying, *Oceanographic data, *Mexico Gulf, Bathythermograph data, Temperature, Salinity, Depth (U)
IDENTIFIERS: *Oceanographic surveys, CICAR program (U)

This report is the first of a series of reports presenting data collected during May of 1972 in a joint effort by the National Oceanic and Atmospheric Agency/Atlantic Oceanographical and Meteorological Laboratory (NOAA/AOML), Nova University, the State University System Institute of Oceanography/Florida (SUSIO), University of Miami, Instituto de Geofisica/Universidad National Autonoma de Mexico, and Texas A+M University. This joint field effort has been declared a part of the Cooperative Investigations of the Caribbean and Adjacent Regions (CICAR) Program. The basic objective was to simultaneously monitor the Loop Current and the currents in the Yucatan and Florida Straits. In particular, this report presents the data collected during Cruise 72-A-9 of Texas A+M University's R/V ALAMINOS. (Author) (U)

AD- 772 231 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Vertical Microstructure Measurements in the Central North Pacific, (U)

MAY 73 15P Gregg,M. C. ;Cox,C. S. ; Hacker,P. W. ;
CONTRACT: N00014-69-A-0200-6006

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Physical Oceanography, v3 n4 p458-469 Oct 73.
SUPPLEMENTARY NOTE: Sponsored in part by Advanced Research Projects Agency, Arlington, Va. Revision of report dated 13 Mar 73.

DESCRIPTORS: *Bathythermograph data, *Pacific Ocean, Sea surface temperature, Thermoclines, Temperature profiles, Depth, Gradients, Salinity, Seasonal variations, Microstructure, Temperature measurement (U)

Temperature profiles were made, during a period of calm weather in early autumn, in the center of the subtropical gyre in the North Pacific with free-fall microstructure instruments as well as with commercial salinity-temperature-depth recorders. In the depth range of 0.2-2 km the data records show irregularly spaced regions of strong gradients separated by sections with weak gradients, but otherwise lack conspicuous features. (Modified author abstract) (U)

AD- 772 105 8/3
DELAWARE UNIV NEWARK COLL OF MARINE STUDIES

Estimation of Stationary and Non-Stationary Ocean Wave Spectra. (U)

DESCRIPTIVE NOTE: Technical rept., SEP 73 46P Tayfun,Mehmet A. ;Yang, Cheng Y. ;
REPT. NO. TR-24
CONTRACT: N00014-69-A-0407
PROJ: NR-388-096

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean waves, *Spectrum analysis, Computer programs, Flow charting, Fortran (U)

In a brief descriptive form, the estimation of non-stationary and stationary spectra from a sample of ocean wave record is presented. The estimation is based on a filter method developed through a smooth generalization of the classical stationary spectral theory. The filter method enables one to interpret the non-stationary spectrum concept and its estimation physically in terms of known concepts in system response in time and frequency domains. A number of practical computation details, a flow chart and computer programs are given. The computer program with the subroutine entitled power can easily be used for non-stationary and stationary spectral analysis of ocean wave data. This illustrated by a realistic application, and some characteristic results are presented. (Modified author abstract) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 771 813 8/10
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Mid-Atlantic Ridge from 47 deg -51 deg North, (U)

APR 73 22P Johnson,G. L. ;Vogt,P. R. ;
PROJ: NR-307-329, RR131-03
TASK: RR131-03-01

UNCLASSIFIED REPORT
Availability: Pub. in Geological Society of America Bulletin, v84 p3443-3462 Oct 73.

DESCRIPTORS: *Bathymetry, *Atlantic Ocean, *Ocean ridges, Ocean bottom topography, Charts, Seismic detection, Faults(Geology), Hydrographic surveys, Oceanography, Marine geology, Earth crust, Lithosphere, Oceans, Marine geophysics (U)
IDENTIFIERS: Midatlantic Ridge, Ocean bottom spreading (U)

An extensive survey of the Mid-Atlantic Ridge from 47 to 51 degrees N. has recovered a large quantity of detailed bathymetric data from the North Atlantic sea floor. Supplemented by seismic reflection and magnetic profiles, these data reveal some surprising characteristics of sea-floor spreading on the Mid-Atlantic Ridge. Closely spaced transform faults, generated about 60 m.y. B.P., extend to crust of about 20 m.y. B.P. age. Because the highest basement levels seem to correlate with probable times of most intense plume convection, it is inferred that a lithosphere of lower density of thicker crust is formed at such times. (Modified author abstract) (U)

AD- 771 567 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Fast Sea-Floor Spreading on the Chile Ridge, (U)

JUN 73 9P Klitgord,K. D. ;Mudie,J. D. ;Larson,P. A. ;Grow,J. A. ;
REPT. NO. LDGO-1988
CONTRACT: N00014-67-A-0108-0004, NSF-GA-27281
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Earth and Planetary Science Letters, v20 p93-99 1973.
SUPPLEMENTARY NOTE: Prepared in cooperation with Scripps Inst. of Oceanography, La Jolla, Calif. Marine Physical Lab., Grant NSF-GA-31377, and Massachusetts Inst. of Tech., Cambridge. Dept. of Earth and Planetary Sciences. Revision of report dated 10 Apr 73.

DESCRIPTORS: *Ocean ridges, *Pacific Ocean, *Magnetic anomalies, Geophysical prospecting, Faults(Geology) (U)
IDENTIFIERS: *Plate tectonics, *Chile Ridge (U)

The orientation and rate of spreading of the Chile Ridge is not well known owing to the paucity and poor orientation of the geophysical observations defining the ridge system. A recent profile crossing the Chile Ridge suggests that the half-spreading rate may be as high as 41 mm/yr from 0 to 5 myBP and 56 mm/yr from 5 to 9 myBP as opposed to previous estimates of 20 to 30 mm/yr. In contrast to the rugged bathymetric relief which has been previously reported for the Chile Ridge, the new profile shows a 500 km-long section of 'smooth' crust on the eastern flank. The authors interpret most of the rugged relief which has been observed as being due to numerous fracture zones offsetting the ridge. Based on a skewness study of the magnetic anomalies, the ridge crest segments have been determined to be oriented along 350 degrees plus or minus 7 degrees. This makes the ridge axis normal to the fracture zones and parallel to the final strike of the Galapagos Rise. (Modified author abstract) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 771 457 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Monthly Mean Sea Surface Temperature Departures over the North Pacific Ocean with Corresponding Subsurface Temperature Departures at Ocean Weather Stations 'VICTOR', 'PAPA', and 'NOVEMBER' from 1950 to 1970, (U)

OCT 73 250P Born,R. ;Walker,A. ;Namias,J. ;White,W. ;
REPT. NO. SIO-Ref-73-28
CONTRACT: N00014-69-A-0200-6043

UNCLASSIFIED REPORT

DESCRIPTORS: *Ocean surface, *Surface temperature, *Pacific Ocean, Bathythermograph data, Statistical analysis, Weather stations, Seasonal variations, Sea water, Temperature profiles, Depth finding (U)
IDENTIFIERS: North Pacific Ocean (U)

The report presents monthly mean sea surface temperature departures from a 20-year mean (1947 - 1966) over the North Pacific Ocean from 1950 to 1970. In addition, bathythermograph data taken at Ocean Weather Stations VICTOR (35 degrees N, 165 degrees E), PAPA (50 degrees N, 145 degrees W) and NOVEMBER (30 degrees N, 140 degrees W) are presented as monthly and long-term means for the months and years available from 1950 to 1970. (Author) (U)

AD- 771 443 8/12 8/10
WASHINGTON UNIV SEATTLE DEPT OF ATMOSPHERIC SCIENCES

Studies Related to the Heat and Mass Balance of Sea Ice and Its Desalination. (U)

DESCRIPTIVE NOTE: Annual rept. no. 5, 1 Oct 72-30 Sep 73,
DEC 73 79P Untersteiner,Norbert ;Maykut, Gary ;Martin,Seelye ;Grenfell,Thomas ;Roulet, Ronald ;
CONTRACT: N0014-67-A-0103-0007
PROJ: NR-307-252

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-754 118.

DESCRIPTORS: *Sea ice, *Desalination, *Arctic Ocean, Thickness, Thermodynamics, Crystal growth (U)

Research topics include: sea ice growth, sea ice dynamics, heat and mass budget of arctic sea ice, desalination, and radiation in ice. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 771 305 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

A Multi-Layer, Nonlinear Regional Dynamic Model of the North Pacific Ocean, (U)

SEP 73 52P Huang,Joseph Chi Kan ;
REPT. NO. SIO-Ref-73-23
CONTRACT: N00014-69-A-0200-6043

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Report on the North Pacific Experiment.

DESCRIPTORS: *Ocean currents, *Pacific Ocean, Circulation, Air Water interactions, Mathematical models, Ocean waves, Vortices, Finite difference theory, Surface temperature, Salinity, Sea water, Anomalies, Heat transfer, Stability (U)
IDENTIFIERS: North Pacific Ocean (U)

A time dependent, three-dimensional numerical dynamic model of the North Pacific Ocean, possessing an actual coastal configuration and seven layers, has been developed at the Scripps Institution of Oceanography in order to show the physical nature of the large-scale normal and abnormal characteristics of the ocean in response to the various normal and anomalous seasonal meteorological conditions. (Author) (U)

AD- 771 193 8/7
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION BOULDER COLO ENVIRONMENTAL RESEARCH LABS

Caribbean Atlantic Geotraverse, NOAA-IDOE 1971, Report No. 3, Gravity. (U)

AUG 73 41P Dorman,Leroy M. ;Bassinger, B. G. ;Bernard,E. ;Bush,S. A. ;Dewald,O. E. ;
REPT. NO. NOAA-TR-ERL-277, AOML-11

UNCLASSIFIED REPORT
Availability: Paper copy available from GPO $2.30 as C55.13:ERL277-AOML11.

DESCRIPTORS: *Oceanographic data, *Gravity, *Atlantic Ocean, Data reduction (U)

The report describes the collection and reduction of about 30.000 km of gravity data that were acquired during 1971 by the NOAA ship Researcher as part of the NOAA-IDOE program. Data are presented as a free-air anomaly map and as profiles of free-air anomaly, accompanied by a track chart. The data, in processed and original form, are available through the NOAA National Geophysical and Solar-Terrestrial Data Center, Boulder, Colo., under NGSDC file number 00102. (U)

AD- 770 949 8/10 17/1
NAVAL UNDERSEA CENTER SAN DIEGO CALIF

Independent Research and Independent Exploratory Development: Annual Report. (U)

DESCRIPTIVE NOTE: Annual rept. 1 Jul 72-20 Jun 73.
SEP 73 57P
REPT. NO. NUC-TP-360

UNCLASSIFIED REPORT

DESCRIPTORS: *Oceanography, *Research management, Sea water, Hydrogen, Solubility, Sonar arrays, Noise reduction, Underwater vehicles, Submersibles, Unmanned, Deep submergence vehicles, Towed sonar, Antisubmarine warfare, Ports(Openings), Optical glass, Images, Ultrasonics, Optical communications, Fiber optics (U)

The report describes the Independent Research and Independent Exploratory Development program at the Naval Undersea Center during fiscal year 1973. It consists of brief articles on nine selected projects together with a listing of all projects active or terminated since the last annual report and the publications resulting from them. The articles describe the following work: determination of the solubility of hydrogen in seawater; development of a noise cancelling techniques that reduces interference in the signal channels of existing sonar systems; studies in the design and application of the S3 semisubmerged ship; development of self-contained water-inflated sonar array structures that can be deployed without the assistance of divers; development of a high speed sonar system that enables high performance surface craft and helicopters to track fast nuclear submarines; development of viewports for optical systems aboard deep-diving submersibles; development of a technique for forming visual images by processing ultrasonic sound scattered by objects in the water; efforts to incorporate glass optic fibers into cables of useful length; and upgrading of the SCAT submersible as well as development of an entirely new submersible, ELECTRIC SNOOPY. (Author) (U)

AD- 770 917 8/10
WISCONSIN UNIV MADISON DEPT OF GEOLOGY AND GEOPHYSICS

Late Cretaceous (Maestrichtian) Silicoflagellates from the Alpha Cordillera of the Arctic Ocean, (U)

JAN 73 5P Ling,Hsin Yi ;McPherson, Linda M. ;Clark,David L. ;
REPT. NO. Clark-15
CONTRACT: N00014-67-A-0128-0002
PROJ: NR-307-311

UNCLASSIFIED REPORT

Availability: Pub. in Science, v180 p1360-1361, 29 Jun 73.
SUPPLEMENTARY NOTE: Revision of report dated 30 Oct 72.

DESCRIPTORS: *Arctic Ocean, *Ocean bottom, *Radiolaria, Cores, Stratification, Foraminifera (U)
IDENTIFIERS: Plate tectonics, Cretaceous era (U)

A Late Cretaceous (probably Maestrichtian) silicoflagellate assemblage has been recovered for the first time from the middle section of a core taken from the Alpha Cordillera in the central Arctic Ocean. The finding of Globigerina pachyderma in the top and very rarely in the bottom part of the core suggests a faulting or slumping process in the area. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0MO7

AD- 770 841 8/5
DEFENSE MAPPING AGENCY AEROSPACE CENTER ST LOUIS MO TECHNICAL TRANSLATION BRANCH

Explanatory Notes to the List of Gravimetric Determinations Made on the Third Cruise of the Research Vessel 'Dmitrii Mendeleev', Atlantic Ocean, 1970 (Katalog Gravimetricheskikh Opredelenii Okean, 1970 g. Poyasneniya k. Katalogu), (U)

OCT 73 11P Bulanzhe,Yu. D. ;
REPT. NO. DMAAC-TC-1978

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Technical trans. of mono. Permanent Expedition for Gravity Surveying at Sea, Moscow, 1972 p2-7, by George Synenko.

DESCRIPTORS: *Gravimetry, *Marine geophysics, *Atlantic ocean, Research ships, Data processing, USSR, Translations (U)

This paper explains the list of gravimetric determinations made on the third cruise of the research vessel 'Dmitriy Mendeleyev', Atlantic Ocean, 1970. Two automated marine gravimeters were used and all materials on the cruise were processed from both gravimeters. The results of only one gravimeter are included in this catalog. (Author) (U)

AD- 770 747 5/4 8/10 13/2
ARCTIC INST OF NORTH AMERICA WASHINGTON D C

The Law of the Sea of the Arctic with Special Reference to Canada. (U)

DESCRIPTIVE NOTE: Final rept. 1971-73,
SEP 73 385P Pharand,Donat ;
REPT. NO. AINA-ONR-435:1
CONTRACT: N00014-70-A-0219-0001
PROJ: NR-307 105

UNCLASSIFIED REPORT
Availability: Paper copy available from Ottawa Univ., Canada $15.00.
SUPPLEMENTARY NOTE: International Standard Book No. 07766-2012-6.

DESCRIPTORS: *International law, *Arctic ocean, *Oceanography, *Water pollution, Ice islands, Continental shelves, Arctic regions, Canada (U)
IDENTIFIERS: *Law of the Sea, Innocent passage, Archipelagos, Oil pollution (U)

Seven major questions are studied: The applicability of the right of innocent passage to the Northwest and Northeast Passages; the status of the waters of the Canadian Arctic Archipelago; the possibility of claiming a historic title to some of the Arctic waters; the applicability of the principle of 'the freedom of the seas' to the Arctic Ocean; the status of ice shelves and ice islands; the international validity of the Canadian Arctic pollution prevention legislation and the state boundaries of the Arctic continental shelf and sea-bed. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 770 354 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Current Path and Bottom Velocity of the Kuroshio, (U)

NOV 73 6P Taft,B. A. ;Robinson,A. R. ;Schmitz,W. J. , Jr;
CONTRACT: N00014-69-A-0200-6006

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Physical Oceanography, v3 p347-350 1973.

DESCRIPTORS: *Ocean currents, *Pacific Ocean, Measurement, Interactions, Ocean bottom, Thermoclines, Ocean bottom topography, Shallow water, Oceanographic data, Japan (U)
IDENTIFIERS: *Kuroshio Current (U)

High-resolution current path delineations and simultaneous bottom velocity observations directly under the Kuroshio have been obtained for the first time during a cruise on Thomas Washington in June-July, 1971. Here a preliminary report of the analysis of these data is given. The variety of these data provides a more detailed synoptic description of the Kuroshio, indicates the time and space scale of the Kuroshio meanders, and reveals the existence of dynamical interactions of the Kuroshio with the lateral and bottom boundaries. (Author) (U)

AD- 770 353 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Measurements of Turbulence and Turbulent Mixing in the Pacific Equatorial Undercurrent, (U)

73 5P Gibson,Carl H. ;Williams, Robert Bruce ;
CONTRACT: N00014-69-A-0200-6006, N00014-69-A-0200-6002
MONITOR: AROD 5133.391-P

UNCLASSIFIED REPORT
Availability: Pub. in the Oceanography of the South Pacific, p19-24 1972.

DESCRIPTORS: *Pacific Ocean, *Ocean currents, Air water interactions, Surface temperature, Salinity, Oceanographic equipment, Turbulent fl (U)
IDENTIFIERS: *Cromwell current (U)

Measurements of small scale fluctuations of velocity and temperature of the Cromwell current at a depth of about 100m at 1 degrees N 150 degrees W are described. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 770 347 8/10
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

On the Deep Water of the Greenland Sea, (U)

DESCRIPTIVE NOTE: Technical rept., FEB 73 30P Carmack,Eddy ;Aagaard,Knut ;
REPT. NO. TR-322, Contrib-713
CONTRACT: N00014-67-A-0103-0014, N00014-67-A-0103-0023
PROJ: NR-307-342

UNCLASSIFIED REPORT
Availability: Pub. in the Deep-Sea Research, v20 p687-715 1973.
SUPPLEMENTARY NOTE: Revision of report dated 18 Jul 72.

DESCRIPTORS: *Greenland Sea, *Deep water, *Sea water, Circulation, Heat, Salinity, Volumetric analysis, Seasonal variations, Turbulent diffusion, Ocean bottom, Oxygen, Mathematical models, Convection(Heat transfer) (U)

A volumetric census of the Greenland Sea indicates a seasonal variation in the Deep Water volume of 30,000 cu km, corresponding to an outflow of 3,000,000 cu m/sec during summer. Winter data imply that Bottom Water is not formed at the sea surface, but rather by a sub-surface modiciation of Atlantic Water within the Greenland Gyre. The formation mechanism appears to involve two separate large-scale convective regimes coupled by a double-diffusive process. (Author) (U)

AD- 770 284 8/1
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Ecology of Cetaceans in Zones of Mixing of Cold (Kurile-Kamchatka) and Warm (Kuroshio) Currents (Usloviya Sushchestvovaniya Kitoobrazhykh v Zonakh Smesheniya Kholognogo (Kurilo-Kamchatskogo i Teplogo (Kuroshio) Techenii), (U)

73 42P Sleptsov,M. M. ;
REPT. NO. NOO-Trans-572

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. of Akademiya Nauk SSSR. Institut Morfologii Zhivotnykh. Trudy, v34 p111-135 1961, by M. Slessers. Supersedes report dated 1970, AD-705 342.

DESCRIPTORS: *Hydrodynamics, *Marine biology, *Ocean currents, *Pacific Ocean, Plankton, Fishes, Whales, Cetacea, Dolphins(Mammals), Translations, USSR (U)
IDENTIFIERS: Kurile Kamchatka Trench, North Pacific Ocean (U)

Distribution of water masses, plankton and fishes is analyzed to determine locations of grazing grounds for whales. Against this background, the distribution of whales in various years and seasons of the year is discussed. The formation of pods, their sizes, compositions, feeding habits, and migrations are outlined, singling out the species that inhabit given areas permanently or temporarily. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 770 230 8/7
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Origin of the Ninety East Ridge From Studies Near the Equator. (U)

DESCRIPTIVE NOTE: Technical rept., APR 73 18P Bowin,Carl ;
REPT. NO. WHOI-73-77, WHOI-Contrib-3023
CONTRACT: N00014-66-C-0241, NSF-GA-12204
PROJ: NR-083-004

UNCLASSIFIED REPORT

Availability: Pub. in Jnl. of Geophysical Research, v78 n26 p6029-6043, 10 Sep 73.
SUPPLEMENTARY NOTE: Revision of report dated 7 Dec 72.

DESCRIPTORS: *Structural geology, *Indian Ocean, *Ocean ridges, *Marine geology, Gravity, Anomalies, Seismic reflection, Magnetic anomalies, Faults(Geology) (U)
IDENTIFIERS: *Ninety East ridge, Plate tectonics, Reflection profiling (U)

A part of the Ninety East ridge near the equator was examined in 1971 by seismic profiling and gravity and magnetic observations. In the area examined, the topography of the ridge consists of blocklike or en echelon mountainous masses. A fracture zone trending north-south parallel to the overall trend was found along the eastern margin of the ridge topography. This fracture zone probably marks the principal boundary between the central Indian Ocean plate and the Wharton basin plate. The free air gravity anomalies associated with the Ninety East ridge are small, and thus the mass of the ridge must in some way be compensated at depth. The Ninety East ridge may have originated as a result of emplacement of gabbro and serpentinized periodtite beneath normal oceanic crustal layers. The lower density of the gabbro and serpentinized peridotite with respect to normal mantle at equivalent depths provides for both the uplift of the ridge and its compensation at depth. (Author) (U)

AD- 770 227 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Interference of Rossby Waves by Reflection from Bahama Banks and Blake-Bahama Outer Ridge. (U)

DESCRIPTIVE NOTE: Technical rept., MAY 73 12P Beckerle,John C. ;Delnore, Victor ;
REPT. NO. WHOI-73-78, WHOI-Contrib-2975
CONTRACT: Nonr-2866(00), Nonr-4029(00)
PROJ: NR-287-004, NR-260-101

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v78 n27 p6316-6324, 20 Sep 73.
SUPPLEMENTARY NOTE: Revision of report dated 10 Nov 72.

DESCRIPTORS: *Ocean waves, Bathythermograph data, Thermoclines, Seasonal variations, Reflection (U)
IDENTIFIERS: Sargasso Sea, *Rossby waves (U)

Numerous bathythermograph observations over an area one million sq km were obtained in summer 1966. These data reveal an array of depressions of the 20C isothermal surface that is offered as evidence for barotropic-baroclinic Rossby waves. Scales ranging from 200 to 500 km are reported in the temperature pattern. The observations are compared with boundary bathymetry and are possibly the result of the interference of Rossby waves reflected from the Bahama Bank, the Blake-Bahama Outer Ridge, and Blake Spur. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 770 050 8/7 8/4
HAWAII INST OF GEOPHYSICS HONOLULU

Interactions of Biogenic Opal, Sediment and Seawater in the Central Equatorial Pacific, (U)

APR 73 28P Hurd,David C. ;
REPT. NO. HIG-Contrib-549
CONTRACT: N00014-70-A-0016-0001
PROJ: NR-083-603

UNCLASSIFIED REPORT
Availability: Pub. in Geochimica et Cosmochimica Acta, v37 p2257-2282 1973.

DESCRIPTORS: (*Ocean bottom, *Silicates), (*Sediments, Ocean bottom), Amorphous materials, Diffusion, Mathematical models, Coring, Interstitials, Marine biology, Solubility, Plankton, Mineralogy, Pacific Ocean (U)

The solution rate of biogenic opal in near-surface sediments in the Central Equatorial Pacific is three to eight orders of magnitude lower than similar acid-cleaned samples. Iron, magnesium and calcium aluminosilicates may be the minerals which are forming on the surface of the opal and reducing its solution rate. The scale height of the system studied suggests that diffusive and not advective processes are primarily responsible for the removal of dissolved silica in sediments. (Modified author abstract) (U)

AD- 769 767 8/10 8/7
HAWAII INST OF GEOPHYSICS HONOLULU

Calcium Carbonate and Gross-Size Analysis of Surface Sediments, Western Equatorial Pacific, (U)

JAN 73 17P Valencia,Mark J. ;
REPT. NO. HIG-Contrib-529
CONTRACT: N00014-70-A-0016-0001

UNCLASSIFIED REPORT
Availability: Pub. in Pacific Science, v27 n3 p290-303 1973.

DESCRIPTORS: (*Pacific Ocean, *Sediments), (*Ocean bottom sampling, Carbonates), Particle size, Depth, Calcium compounds, Sediment transport, Bathymetry, Volcanoes, Marine biology (U)
IDENTIFIERS: Ontong Java Plateau, Solomon Islands, *Calcium carbonates (U)

Surface-sediment samples taken from the tops of 47 free-fall, trigger-weight, or piston cores from an area in the western equatorial Pacific (long 155 degrees E-175 degrees E, lat 10 degrees N-10 degrees S) were separated into three size-fractions (< 44 micrometers, 44-246 micrometers, > 246 micrometers, and the calcium carbonate content of the total sample and of each size-fraction was determined. An abrupt decrease in carbonate content in the western equatorial Pacific occurs at 3,500 m, whereas the compensation depth is found at 5,250 m. A strong positive correlation of the < 44 micrometers fractions with depth suggests that anomalous values for this weight-fraction may be useful in delineating displaced surface sediments in the area studied. (Modified author abstract) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 769 573 8/10 8/7
HAWAII INST OF GEOPHYSICS HONOLULU

Heat Flow in the Western Equatorial Pacific Ocean, (U)

MAR 73 17P Halunen,A. John , Jr.;Von Herzen,Richard P. ;
REPT. NO. HIG-Contrib-538
CONTRACT: N00014-70-A-0016-0001, Nonr-3748(05)

UNCLASSIFIED REPORT
Availability: Pub. in the Jnl. of Geophysical Research, v78 n23 p5195-5208, 10 Aug 73.
SUPPLEMENTARY NOTE: Revision of report dated 24 Apr 72. Prepared in cooperation with Woods Hole Oceanographic Institution, Mass.

DESCRIPTORS: (*Pacific Ocean, Heat transmission), (*Ocean bottom, Heat transmission), Oceanographic data, Thermal conductivity, Ocean bottom topography, Tectonics, South Pacific Ocean (U)
IDENTIFIERS: Solomon Islands, Marshall Islands, Gilbert Islands, Ellice Islands, Coral Sea (U)

New heat flow measurements in the western equatorial Pacific (mainly between 20 degrees N and 20 degrees S latitudes) are presented and briefly discussed in the context of new global tectonics. In addition to those from the central Pacific basin and the Solomon Islands region, measurements are reported from the Coral Sea and several trenches without previously reported data. (U)

AD- 769 555 8/12 8/10
WASHINGTON UNIV SEATTLE DEPT OF ATMOSPHERIC SCIENCES

An Integrated System for Measuring Sea Ice Motions. (U)

DESCRIPTIVE NOTE: Technical rept.,
73 13P Thorndike,Alan S. ;
REPT. NO. TR-18
CONTRACT: N00014-67-A-0103-0007
PROJ: NR-307-252

UNCLASSIFIED REPORT
Availability: Pub. in Unidentified Jnl.

DESCRIPTORS: (*Sea ice, Motion), (*Oceanographic equipment, Sea ice), (*Arctic Ocean, Sea ice), Data processing, Numerical analysis, Azimuth, Position finding (U)

One of the objectives of the AIDJEX Spring 1972 Pilot Study was to develop an improved ability to measure the motions of sea ice in the central Arctic Ocean. An integrated system is described in which the basic measurements of position are acquired by the Navy Navigation Satellite System and a specially designed hydroacoustic tracking system. Celestial observations of ice floe azimuth give the system additional redundancy. These measurements are then related to ice velocities and accelerations by a series of time difference equations. Kalman filtering techniques are used in the data processing scheme. The power of this system was indicated by simulation runs and later confirmed by analysis of the field data. It appears that such a system can resolve the full spectrum of ice motions. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 769 554 8/7 8/5
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Gravity and Magnetic Investigations in the Guiana Basin, Western Equatorial Atlantic. (U)

DESCRIPTIVE NOTE: Journal article,
APR 73 30P Cochran,James R. ;
REPT. NO. LDGO-1998
CONTRACT: N00014-67-A-0108-0004, NSF-GA-27281
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in the Geological Society of American Bulletin, v84 p3249-3268 Oct 73.
SUPPLEMENTARY NOTE: Revision of report dated 7 Dec 72.

DESCRIPTORS: (*Ocean bottom, *Gravimetry), (*Terrestrial magnetism, Ocean bottom), (*Atlantic Ocean, Geophysics), Ocean bottom topography, Magnetic anomolies, Faults(Geology), Seamounts, Amazon River, South Atlantic Ocean, Continental shelves, Sediments, Lithosphere, Brazil (U)
IDENTIFIERS: Guiana Basin, Gravity Anomalies (U)

A free-air gravity map of the Guiana Basin between 15 degrees N. and 6 degrees S. in the western equatorial Atlantic, using all available shipboard and pendulum data, is presented. The magnetic anomalies over the large equatorial fracture zones indicate that the fracture zone trough is an area of zero or greatly reduced magnetization within a zone in which the magnetization is induced rather than remanent. The gravity and magnetic evidence together suggest that large fracture zones serve as the site of intrusion of ultrabasic rocks from depth. The deformation of the lithosphere due to the sediment load of the Amazon cone and the resulting gravity anomalies were computed for various flexural rigidities, using two-dimensional elastic beam theory. It is suggested that the lithosphere behaves somewhat as a Kelvin (viscoelastic solid) material in its response to imposed long-term loads. (Modified author abstract) (U)

AD- 769 553 8/7 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Clay Mineralogy and Sedimentation in the Eastern Indian Ocean. (U)

DESCRIPTIVE NOTE: Journal article, MAR 73 16P Venkatarathnam,Kolla ;Biscaye, Pierre E. ;
REPT. NO. LDGO-1977
CONTRACT: N00014-67-A-0108-0004, AT-(11-1)-3132
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in the Deep-Sea Research, v20 p727-738 1973.
SUPPLEMENTARY NOTE: Revision of report dated 7 Dec 72.

DESCRIPTORS: (*Clay minerals, *Ocean bottom), (*Indian Ocean, *Sedimentation), Ocean bottom topography, Transport properties, Volcanoes, Kaolinite (U)
IDENTIFIERS: Chlorite menerals, Illite, Smectite (U)

The distributions of clay minerals in the surface sediments based on about 100 new samples from the eastern Indian Ocean reveal several distinctive sediment sources which differ from those reported previously by other workers. The authors observed the following: (1) large zones around the periphery of the study area are characterized by abundant smectite. (2) The Ganges Cone and the Java Trench are characterized by relatively more abundant illite and chlorite dispersed primarily by turbidity currents from the Ganges and Brahmaputra rivers. (3) A zone extending west of Australia to the Ninety East Ridge, contains relatively abundant kaolinite which is probably wind-borne from that continent. (U)

AD- 769 552 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Plate Tectonics and the Evolution of the Alpine System. (U)

DESCRIPTIVE NOTE: Journal article, MAY 73 52P Dewey,John F. ;Bonnin , Jean ;Ryan,William B. F. ;Pitman,Walter C. , III;
REPT. NO. LDGO-1992
CONTRACT: N00014-67-A-0108-0004
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in the Geological Society of American Bulletin, v84 p3137-3180 Oct 73.
SUPPLEMENTARY NOTE: Revision of report dated 20 Nov 72.

DESCRIPTORS: (*Structural geology, *Mediterranean Sea), Africa, Europe, Earth models (U)
IDENTIFIERS: *Plate tectonics, Alpine system, Evolution(Development) (U)

It is contended that the Late Triassic to present-day gross evolution of the Alpine system in the Mediterranean region has been the result of activity along an evolving network of accreting, transform, and subducting plate boundaries between the large stable cratons of Europe and Africa. A refined assembly of the outlines of the continents around the North and central Atlantic, before the initial dispersion of Gondwanaland in Early Jurassic times, is presented. By considering geologic facies, structural fabric, and paleomagnetic criteria, the smaller continental fragments now found within the Alpine system are restored to their proposed initial positions relative to each other in the reconstruction offered. (Modified author abstract) (U)

AD- 769 457 8/10
NAVAL RESEARCH LAB WASHINGTON D C

Retrieval Program for Archival Nansen-Cast Data. (U)

OCT 73 33P Roberts,B. G. , Jr;
REPT. NO. NRL-7633
PROJ: RF52-552, NRL-S01-67
TASK: RF52-552-402

UNCLASSIFIED REPORT

DESCRIPTORS: (*Oceanographic data, *Information retrieval), FORTRAN, Salinity, Temperature, Depth, Acoustic velocity, Computer programming, Data banks (U)

A program has been written in Fortran and Compass for the retrieval of environmental data from a compacted version of the National Oceanographic Data Center tapes. The tape file currently contains the results of approximately 361,000 Nansen casts. Each cast (or station) has such data as sound speed, temperature, and salinity recorded at various depths. The information retrieval program has five modes of operation to serve a variety of user needs. This report includes a complete description of the program, explains the five modes, and gives examples of each. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0MO7

AD- 769 271 4/2
NAVAL WEATHER SERVICE ENVIRONMENTAL DETACHMENT ASHEVILLE N C

Northeast Atlantic Environmental Scenario. (U)

NOV 73 179P

UNCLASSIFIED REPORT

DESCRIPTORS: (*Climate, Atlantic Ocean), (*Marine meteorology, *Atlantic Ocean), Ceiling, Cloud cover, Fog, Wind direction, Diurnal variations, Atmospheric precipitation, Atmospheric temperature, Storms, Visibility, Ocean surface, Sea ice, Ocean waves, Graphs, Iceland (U)

The publication presents a broad climatic survey of five areas in the Northeastern Atlantic Ocean. Over 40 different presentations have been devised to describe the major features of the climate. Most of the charts and graphs depict percentage frequency of occurrence of observations recording phenomena of particular operational significance. Topics discussed include the following: Ceiling; cloudiness; fog; precipitation; storms; superstructure icing; surface currents; temperature, humidity; visibility; waves; wind; land, ice. (U)

AD- 769 096 8/1
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Bottom Water and Benthonic Foraminifera in the North Atlantic-Glacial-Interglacial Contrasts, (U)

JAN 73 14P Streeter,S. Stephen ;
REPT. NO. LDGO-1960
CONTRACT: N00014-67-A-0108-004
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Quaternary Research, v3 n1 p131-141 Jun 73.

DESCRIPTORS: (*FORAMINIFERA, *ATLANTIC OCEAN), (*OCEAN BOTTOM, *MARINE BIOLOGY), PERIODIC VARIATIONS (U)
IDENTIFIERS: BENTHOS, PALEOCLIMATOLOGY, BATHYMETRY, NORTH ATLANTIC OCEAN (U)

The paper presents some preliminary results of a survey of the modern and late Pleistocene distribution of benthonic foraminifera in the bottom sediments of the deep North Atlantic. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 769 094 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Deep-Sea Zeolites: Variations in Space and Time in the Sediments of the Indian Ocean, (U)

MAY 73 9P Venkatarathnam,Kolla ;Biscaye, Pierre E. ;
REPT. NO. LDGO-1972
CONTRACT: N00014-67-A-0108-0004, AT(11-1)3132

UNCLASSIFIED REPORT
Availability: Pub. in Marine Geology, v15 pM11-M17, 25 May 73.
SUPPLEMENTARY NOTE: Sponsored in part by Grant NSF-GA-35454.

DESCRIPTORS: (*OCEAN BOTTOM, *INDIAN OCEAN), (*CLAY MINERALS, INDIAN OCEAN), SEDIMENTATION, MARINE GEOLOGY (U)
IDENTIFIERS: *ZEOLITES, *CLINOPTILOLITE, GEOMORPHOLOGY, *PHILLIPSITE (U)

In the Indian Ocean, the zeolite phillipsite is often found in Miocene and younger sediments and is confined to the central areas of the sea floor. This zeolite forms from the alteration of basic volcanic material and does not require much time for its formation. Another zeolite, clinopilolite, however, is most often restricted to Cretaceous to Eocene sediments in areas closer to the continental land masses. This distribution in space and time is thought to be due to the availability of silicic volcanics during the early formation of the Indian Ocean in the Cretaceous to Eocene time. The mobilization of silica from opal-rich sediments during these times may also have been an important factor in the formation of clinoptilolite. (Author) (U)

AD- 768 903 8/10
TEXAS A AND M UNIV COLLEGE STATION DEPT OF OCEANOGRAPHY

Geology and Geophysics of the Beata Ridge - Caribbean. (U)

DESCRIPTIVE NOTE: Technical rept., SEP 73 109P Roemer,Lamar B. ;Bryant, William R. ;Fahlquist,Davis A. ;
REPT. NO. A/M-Ref-73-14-T
CONTRACT: N00014-68-A-0308, NSF-GA-1296

UNCLASSIFIED REPORT

DESCRIPTORS: (*MARINE GEOLOGY, *CARIBBEAN SEA), (*OCEAN BOTTOM TOPOGRAPHY, CARIBBEAN SEA), SEISMOLOGY, FAULTS(GEOLOGY), GEOMAGNETISM (U)
IDENTIFIERS: *BEATA RIDGE, SEISMIC REFLECTION, OCEAN RIDGES, SEISMIC PROFILES, BATHYMETRY, PLATE TECTONICS (U)

Interpretation of bathymetric, magnetic and seismic reflection surveys in the Beata Ridge region provide evidence for two distinct geologic provinces: (1) the Beata Ridge system; and (2) a Late Cenozoic deformational fold belt north of Venezuela and Colombia. The Beata Ridge is a structural high produced by at least three periods of differential uplift with the earliest faulting in the Late Cretaceous or Early Tertiary. The western side of the ridge is marked by a prominent fault. To the south the scarp is replaced by a series of smaller horsts and grabens. The deformational fold system parallels the northern coast of South America and may have resulted from the Caribbean plate colliding with the Americas plate. The analytical models of potential faults by Hafner (1951) and Sanford (1959) have been tested on the Beata Ridge. The close agreement between theoretical predictions and the observed structure of the basement underlying the ridge is good enough for application of the model on a regional scale. However, the deformation of the sedimentary veneer is primarily by folding accompanied by secondary faulting. (Modified author abstract) (U)

AD- 768 730 13/2 8/3 8/10
NAVAL UNDERSEA CENTER SAN DIEGO CALIF

California Undersea Aqueduct Reconnaissance: the Oceanography (CUARO). (U)

DESCRIPTIVE NOTE: Research and Development Report, Jan 72-Feb 73, AUG 73 231P Riffenburgh,Robert H. ;
REPT. NO. NUC-TP-353

UNCLASSIFIED REPORT

DESCRIPTORS: (*CALIFORNIA, WATER SUPPLIES), (*WATER SUPPLIES, UNDERWATER), (*OCEAN CURRENTS, OCEAN BOTTOM), OCEAN WAVES, OCEAN BOTTOM TOPOGRAPHY, OCEANOGRAPHIC DATA, UNDERWATER LIGHT, MAPS, CONSTRUCTION, PACIFIC OCEAN (U)
IDENTIFIERS: GEOSTROPHIC FLOW, AQUEDUCTS, TSUNAMIS (U)

The report discusses the possibility of conveying fresh water from northern to southern California via a subsurface offshore aqueduct (the California Undersea Aqueduct). The specific region investigated was between Crescent City and San Diego from the 20- to 200-m depth contour. All available data on relevant variables were analyzed to provide information for aqueduct planning decisions. The variables and analyses most influential in planning the California Undersea Aqueduct were divided into two categories: variables influencing the 100-year survival of the aqueduct(century risks) and variables influencing the construction and maintenance of the aqueduct. Waves, surges, tsunamis, density, and light do not appear on the basis of reconnaissance data to pose insurmountable problems. Surface, water column, and bottom currents, including upwelling and internal wave phenomena, may or may not be prohibitive; data are inadequate, and additional information must be obtained from in situ observations. Canyons are not an insurmountable threat, but will pose innovative engineering challenges and probably be quite expensive. Additional data will also be required on these processes. (Author) (U)

AD- 768 687 8/10 8/3
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Annual Variation of the Intensity of the Labrador and West Greenland Currents and the Prediction of Temperature Conditions in Commercially Exploited Regions of the Northwest Atlantic Ocean, (U)

73 26P Yelizarov,A. A. ;
REPT. NO. NOO-TRANS-570

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. by Okeanologiya (USSR) v2 n5 p796-809 1962, by V. Astvazaturov.

DESCRIPTORS: (*OCEAN CURRENTS, *TEMPERATURE), TABLES(DATA), NEWFOUNDLAND(PROVINCE), USSR (U)
IDENTIFIERS: TRANSLATIONS, NORTH ATLANTIC OCEAN, LABRADOR CURRENT, WEST GREENLAND CURRENT (U)

The paper reports an investigation of the possibility of predicting temperature conditions in the Newfoundland and Labrador regions from water temperatures along the Kola meridian. Historical temperature data for the Labrador and West Greenland Currents are given and analyzed. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 768 639 8/7 8/10
NAVAL UNDERSEA CENTER SAN DIEGO CALIF

Marine Geology of the Aleutian Abyssal Plain, (U)

FEB 73 33P Hamilton,Edwin L. ;
PROJ: R131-03-01, NR-083-277

UNCLASSIFIED REPORT
Availability: Pub. in Marine Geology, v14 p295-325 1973.

DESCRIPTORS: (*MARINE GEOLOGY, *ALASKA GULF), (*OCEAN BOTTOM, ALASKA GULF), SEDIMENTATION, OCEAN BOTTOM TOPOGRAPHY, GEOLOGIC AGE DETERMINATION (U)
IDENTIFIERS: SUBMARINE PLAINS, TECTONICS, SEAMOUNTS, BATHYMETRY (U)

Five expeditions (1965-1970) across parts of the Aleutian Abyssal Plain and adjacent areas in the Gulf of Alaska, and results of the Deep Sea Drilling Project, provide new information for the geologic history of the region which forms restrictive limits on models of plate tectonics. In general: (1) the Eocene-Oligocene, turbidite Aleutian Abyssal Plain was deposited from channelized turbidity currents from the north or northeast; (2) the plain is bounded on the south by the northern ridges of the Surveyor Fracture Zone, and is isolated from the Tufts Abyssal Plain; (3) turbidites were deposited from many buried channels and smaller surficial channels, but mainly from four great channels: Seamap, Sagittarius, Aquarius, and Taurus. (U)

AD- 768 480 8/1
INSTITUTE FOR MARINE ENVIRONMENTAL RESEARCH ENDINBURGH (SCOTLAND) OCEANOGRAPHIC LAB

Marine Biology and the Ocean Weather Ships, (U)

73 12P Jones,D. H. ;

UNCLASSIFIED REPORT

Availability: Pub. in the Marine Observer, v43 p73-77 1973.

DESCRIPTORS: (*MARINE BIOLOGY, *ATLANTIC OCEAN), (*NORTH SEA, MARINE BIOLOGY), PLANKTON, SAMPLERS, FISHES, OCEANOGRAPHIC SHIPS, GREAT BRITAIN (U)

The primary objective of the laboratory during the whole of this period has been to study changes in the abundance, distribution and composition of plankton in samples collected each month along standard shipping routes in the North Sea and the North Atlantic. The apparatus used to collect these samples is called the Hardy Continuous Plankton Recorder. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 768 399 8/1
ARCTIC INST OF NORTH AMERICA WASHINGTON D C

Studies on Organisms Found in Arctic Sea Ice. (U)

DESCRIPTIVE NOTE: Technical rept. 1970-72, MAR 73 157P Horner,Rita A. ;
REPT. NO. AINA-ONR-431:20
CONTRACT: N00014-70-A-0219-0001
PROJ: NR-307-105

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with the Alaska Univ., College. Inst. of Marine Science.

DESCRIPTORS: (*MICROORGANISMS, *SEA ICE), (*MARINE BIOLOGY, *ARCTIC OCEAN), PLANKTON, SEA WATER, TEMPERATURE, SALINITY, CHLOROPHYLLS, SAMPLING, DEEP WATER, ORGANIC COMPOUNDS (U)
IDENTIFIERS: PRIMARY BIOLOGICAL PRODUCTIVITY (U)

Preliminary studies of the organisms living in sea ice and the ice habitat at Barrow, Alaska, are presented; this community is compared with the phytoplankton community that occurs in the seawater under the ice and during the open water period. Parameters examined include salinity, temperature, nutrient and chlorophyll a concentrations, and primary productivity. The uptake of dissolved organic compounds was studied to determine the heterotrophic potential of the ice community. Other areas sampled included Eluitkak Pass, Wainwright, Prudhoe Bay, and deep water sites 25 to 150 miles offshore. A kelp bed near the Naval Arctic Research Laboratory is described. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 768 280 8/10
NAVAL CIVIL ENGINEERING LAB PORT HUENEME CALIF

Engineering Properties of Some North Pacific and Bering Sea Soils. (U)

DESCRIPTIVE NOTE: Technical note Aug 71-Dec 72,
AUG 73 31P Lee,H. J. ;
REPT. NO. NCEL-TN-1283
PROJ: YF53.535
TASK: YF53.535.002

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN BOTTOM, *SOIL MECHANICS), (*BERING SEA, OCEAN BOTTOM SAMPLING), (*PACIFIC OCEAN, OCEAN BOTTOM SAMPLING), COMPRESSIVE PROPERTIES, SHEAR STRESSES (U)
IDENTIFIERS: NORTH PACIFIC OCEAN, MOISTURE CONTENT (U)

During Leg 19 of the Deep Sea Drilling Project, the DV GLOMAR CHALLENGER obtained seafloor soil samples from the Bering Sea and North Pacific Ocean. These were tested for engineering properties including vane shear strength and compressibility. The results were analyzed and corrected for the significant disturbance introduced during sampling. Since the correction procedures used are based on a number of assumptions, the corrected results are approximately within perhaps 50 percent of the correct properties. These estimated engineering properties appear to follow the same trend as land soils and can be correlated with index properties obtained from totally remolded samples. This report represents one phase of a project to investigate seafloor soils on a worldwide basis. Eventually a final report summarizing all of the individual phase will be prepared. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 768 071 8/10 8/3 8/1
OREGON STATE UNIV CORVALLIS SCHOOL OF OCEANOGRAPHY

Compilation of Reprints, (U)

JAN 73 61P Plank,W. S. ;Alvarez-Borrego,S. ;Zaneveld,J. R. V. ;Huyer,A. ; Park,P. K. ;
REPT. NO. Ref-72-18, Ref-72-19
CONTRACT: N00014-67-A-0369-0007
PROJ: NR-083-102

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v77 n9 p1689-1694; 20 Mar 72; v77 n15 p2677-2680, 20 May 72; v78 n18 p3215-3220, 20 Jun 72, Jnl. of the Oceanographical Society of Japan, v27 n4 p142-151 Aug 72; v28 n2 p72-93 Apr 73, and Jnl. of Physical Oceanography, v2 n3 p286-293 Jul 72.
SUPPLEMENTARY NOTE: Also includes rept nos. Ref-72-20 thru Ref-72-23.

DESCRIPTORS: (*OCEANOGRAPHIC DATA, REPORTS), SEA WATER, LIGHT TRANSMISSION, UNDERWATER LIGHT, PACIFIC OCEAN, CHEMICAL ANALYSIS, BERING SEA, WIND, OCEAN CURRENTS, CONTINENTAL SHELVES (U)
IDENTIFIERS: SUSPENDED SEDIMENTS, NORTH PACIFIC OCEAN, DISSOLVED GASES, DISSOLVED ORGANIC MATTER (U)

:Contents: Light scattering and suspended matter in nepheloid layers; Oxygen-carbon dioxide-nutrients relationships in the southeastern region of the Bering Sea; Some aspects of the axially symmetric submarine daylight field; A comparison between wind and current observations over the continental shelf off Oregon, summer 1969; AOU as indicator of water-flow direction in the Central North Pacific; Surface currents off Oregon as determined from drift bottle returns. (U)

AD- 767 886 8/10
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

Latitudinal Variation and Seasonal Variations in the Total Content of Atmospheric Ozone in the Indian Ocean. (U)

SEP 73 15P. Gushchin,G. K. ;
REPT. NO. FTD-HT-23-778-73

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Edited trans. of Glavnaya Geofizicheskaya Observatoriya, Leningrad. Trudy (USSR) n279 p85-93 1972, by Louise E. Heenan.

DESCRIPTORS: (*OZONE, *INDIAN OCEAN), SEA WATER, OCEANOGRAPHIC DATA, USSR (U)
IDENTIFIERS: TRANSLATIONS, SEASONAL VARIATIONS (U)

The report contains analysis of observations for total ozone content which were conducted in the Indian Ocean on the A.I. Voyeykov, and the Yu. M. Shokal'skiy (1961-1970), on the scientific research ship Akademik Korolev (1968-1969), and on the diesel-powered ship Ob' (1966). (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 767 810 9/2 8/10
SACLANT ASW RESEARCH CENTRE LA SPEZIA (ITALY)

The SACLANTCEN Shipborne Computer Environmental-Data Acquisition System. Volume 5. SCRAPS -- A Computerized Real-Time Acquisition and Processing System for Hewlett Packard 2116B Computers. (U)

DESCRIPTIVE NOTE: Memorandum rept.,
AUG 73 82P Goudriaan,Eeuwoud ;
REPT. NO. SACLANTCEN-SM-19

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-760 186. NATO furnished.

DESCRIPTORS: (*DATA PROCESSING, SHIPBOARD), (*OCEANOGRAPHIC DATA, DATA PROCESSING), REAL TIME, COMPUTER PROGRAMS, INSTRUCTION MANUALS, ITALY (U)
IDENTIFIERS: DATA ACQUISITION, SCRAPS SYSTEM, HP 2116B COMPUTERS, FORTRAN 2 PROGRAMMING LANGUAGE, FORTRAN 4 PROGRAMMING LANGUAGE, FORTRAN, ASSEMBLY LANGUAGES, ON LINE SYSTEMS (U)

An automatic environmental data-logging and computing system installed on board SACLANTCEN's research vessel is described in a series of memoranda. This memorandum of the series concerns the specifications and operations of a software package that controls the low-speed sampling and storage of slowly-varying electrical analogue signals via an analogue-to-digital converter. It has been designed for Hewlett Packard 2116B mini-computers but may easily be modified for use on most general-purpose digital computers. Appendices provide specific instructions for the system's use with the 'WAVERIDER' buoy, with data input devices that do not use analogue-to-digital converters, and with personally-written software for real-time on-line data processing. (Author) (U)

AD- 767 729 8/10
OREGON STATE UNIV CORVALLIS SCHOOL OF OCEANOGRAPHY

Observations of Light Scattering and Suspended Particulate Matter off the Oregon Coast June-October 1972. (U)

DESCRIPTIVE NOTE: Data rept., JUN 73 78P Plank,William S. ;Pak, Hasong ;
REPT. NO. Data-55, Ref-73-11
CONTRACT: N00014-67-A-0369-0007
PROJ: NR-083-102

UNCLASSIFIED REPORT

DESCRIPTORS: (*PACIFIC OCEAN, LIGHT TRANSMISSION), (*SEA WATER, PARTICLE SIZE), OCEANOGRAPHIC DATA, STATISTICAL DISTRIBUTIONS, TABLES(DATA), OREGON (U)
IDENTIFIERS: *SUSPENDED SEDIMENTS, LIGHT SCATTERING, PARTICLE SIZE, UPWELLING (U)

The results of light scattering measurements made with a Brice-Phoenix photometer and particle size distribution measurements made with a Model A Coulter Counter are presented. The data were collected on five cruises off the Oregon Coast during the period June - October 1972. The cruises were a part of the Coastal Upwelling Experiment (CUE). (Author) (U)

AD- 767 162 8/7 8/10
TEXAS A AND M UNIV COLLEGE STATION DEPT OF OCEANOGRAPHY

Ultrabasic Rocks from the Cayman Trough, Caribbean Sea, (U)

JAN 73 7P Eggler,David H. ;Fahlquist, D. A. ;Pequegnat,W. E. ;Herndon,J. M. ;
CONTRACT: N00014-68-A-0308-0002

UNCLASSIFIED REPORT
Availability: Pub. in Geological Society of America Bulletin, v84 p2133-2138 Jun 73.
SUPPLEMENTARY NOTE: Sponsored in part by National Science Foundation, Washington, D.C. Prepared in cooperation with Geophysical Lab., Washington, D.C. Revision of report dated 25 Sep 72.

DESCRIPTORS: (*ROCK, *OCEAN BOTTOM), (*CARIBBEAN SEA, *OCEAN BOTTOM SAMPLING), BASALT, PETROGRAPHY, STRUCTURAL GEOLOGY (U)
IDENTIFIERS: BATHYMETRY, *CAYMAN TROUGH, SEISMIC PROFILES, SERPENTINITE (U)

Ultrabasic rocks have been dredged from the center of the Cayman Trough, a postualted boundary between the North American and Caribbean plates, 160 km southwest of Grand Cayman Island. Serpentinite, which may be altered spinel lherzolite, dominates the collection and is believed to be bedrock in the station area. Two samples of a clinopyroxene-plagioclase-ilmenite crystal cumulate were found. (Author) (U)

AD- 767 047 8/3
TEXAS A AND M RESEARCH FOUNDATION COLLEGE STATION

An Investigation of the Interaction Between the Gulf Stream and the New England Seamount Chain. Data Report. (U)

DESCRIPTIVE NOTE: Technical rept., JUN 73 515P Vastano,Andrew C. ;Warren, Bruce A. ;
REPT. NO. A/M-Ref-73-8-T
CONTRACT: N00014-68-A-0308-0002

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with Woods Hole Oceanographic Inst., Contract N00014-66-C-0241.

DESCRIPTORS: (*GULF STREAM, OCEANOGRAPHIC DATA), OCEAN BOTTOM TOPOGRAPHY, DEPTH FINDING, PRESSURE, TEMPERATURE, SALINITY, SOUND TRANSMISSION, POTENTIAL ENERGY, ATLANTIC OCEAN, UNDERWATER SOUND, TABLES(DATA) (U)
IDENTIFIERS: NEW ENGLAND, ACOUSTIC VELOCITY, BATHYMETRY, SEAMOUNTS (U)

The data compiled in the report were collected on the twenty-second research cruise of R. V. KNORR, Woods Hole Oceanographic Institution, E. H. Hiller, master and bears on the interaction of the Gulf Stream and the New England Seamount Chain. The field project was conducted in three separate phases: (1) a rapid survey with expendable bathythermographs (XBT's) to locate and trace the path of the Gulf Stream; (2) the deployment of seven current meters in single meter moorings along a line perpendicular to the indicated Gulf Stream track upstream of the seamount chain, 200 meters off the bottom at depths of approximately 4800 meters; and (3) a hydrographic survey in the vicinity of the Kelvin and Atlantis II seamounts. In all, 211 XBT's were taken and 111 STD stations (with water samples) were occupied during the cruise. The bathymetry, read from fathometer records, was corrected for local variations in the vertical distribution of sound velocity. (U)

AD- 767 043 8/10
WASHINGTON UNIV SEATTLE APPLIED PHYSICS LAB

Studies in the Marginal Ice Zone of the Chukchi Sea. Acoustic and Oceanographic Data for 1972, (U)

JUL 73 157P Garrison,Gerald R. ;Pence, Elbert A. ;Feldman,Henry R. ;
REPT. NO. APL-UW-7309
CONTRACT: N00123-71-C-1333, ARPA Order-1782

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEANOGRAPHIC DATA, *CHUKCHI SEA), SEA ICE, TEMPERATURE, SALINITY, OCEAN CURRENTS, UNDERWATER SOUND, SOUND TRANSMISSION, ARCTIC REGIONS, ICE ISLAND (U)
IDENTIFIERS: GRAPHS(CHARTS), TABLES(DATA) (U)

Oceanographic and acoustic measurements were made from an icebreaker and from a camp on an ice floe in the Chukchi Sea during the summer of 1972. The purpose of this report is to present the large amount of data in a form which involves only a minimum amount of processing. These data include temperature and salinity profiles, current measurements, sound level profiles at short range from a 60-kHz pulse transmitter, volume reverberation from biological scatterers, and ice floe movement in relation to wind and currents. The analysis of these data will appear in a subsequent report. (Author) (U)

AD- 766 829 8/1 6/6
FLORIDA STATE UNIV TALLAHASSEE DEPT OF OCEANOGRAPHY

Benthic Ecology of the High Arctic Deep-Sea. (U)

DESCRIPTIVE NOTE: Final rept. Apr 71-Sep 73, SEP 73 349P Paul,Allen Zachary ;Menzies, Robert James ;
CONTRACT: N00014-67-A-0235-0005

UNCLASSIFIED REPORT

DESCRIPTORS: (*ECOLOGY, *ARCTIC OCEAN), (*MARINE BIOLOGY, ARCTIC OCEAN), OCEAN BOTTOM, OCEAN BOTTOM TOPOGRAPHY, OCEAN BOTTOM SAMPLING, AQUATIC ANIMALS, FORAMINIFERA (U)
IDENTIFIERS: BENTHOS (U)

The investigation is an analyses of seventy-five quantitative benthic samples collected by the Mini-LUBS, twenty-eight qualitative benthic samples collected with the Small Biological Trawl, and fifty-two bottom camera stations taken from Flethcer's Ice Island, T-3 while it was drifting over the Alpha Cordillera region of the High Arctic Ocean during October 1969 through February 1970 and in March 1972. The depth range was 1000 to 2500 m. Benthic foraminiferans are responsible for about 53 per cent, bivalves for 27 per cent, sponges for 7 percent, and polychaetes for 5 per cent of the total biomass. Other groups make up the remaining 8 per cent. In numbers, excluding Foraminifera, polychaetes are 42 per cent, nematodes 16 per cent, sponges 11 per cent, and bivalves 8 per cent of the total fauna. The remaining 23 per cent is composed of thirteen other taxa. (Modified author abstract) Portions of this document are not fully legible. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 766 584 8/7
GEOLOGICAL SURVEY MENLO PARK CALIF

A Simple Mechanical Model for Oceanic Spreading Centers, (U)

FEB 73 24P Lachenbruch,Arthur H. ;
CONTRACT: NAonr-11-73
PROJ: NR-307-275

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v78 n17 p3395-3417, 10 Jun 73.
SUPPLEMENTARY NOTE: Revision of report dated 1 Nov 72.

DESCRIPTORS: (*LITHOSPHERE, MOTION), (*OCEAN BOTTOM, *MARINE GEOPHYSICS), MATHEMATICAL MODELS, CONTINENTAL SHELVES (U)
IDENTIFIERS: *OCEAN RIDGES, TECTONICS, *CONTINENTAL DRIFT (U)

In a simple model for a spreading oceanic ridge, it is assumed that viscous material rises as a result of gravitational instability in a vertical-walled cleft between steadily diverging lithosphere plates of uniform thickness. The requirement that the walls must accrete at the same rate as they spread permits a simple discussion of the energetics of the circuit. A numerical example suggests that the rate of mechanical energy dissipation in the conduit may be comparable on a global scale to the total rate of seismic energy release. This much energy is available to drive or resist plate separation at oceanic ridges, depending on the vertical distribution of pressure in the conduit. The model provides a relation between mean viscosity, conduit dimensions, and spreading velocity. (Modified author abstract) (U)

AD- 766 461 8/3
HYDRONAUTICS INC LAUREL MD

Hydrodynamic Study of Density Surges and Turbidity Flows. (U)

DESCRIPTIVE NOTE: Technical rept., JUL 73 72P Schwartz,Josef ;van de Watering,Walter ;Landa,Issac ;Reed,Sidney , Jr;
REPT. NO. TR-805-1
CONTRACT: N00014-68-C-0134
PROJ: NR-083-605

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN CURRENTS, HYDRODYNAMICS), FLOW FIELDS, MATHEMATICAL MODELS, OCEAN BOTTOM (U)
IDENTIFIERS: SEDIMENT TRANSPORT, *TURBIDITY CURRENTS (U)

An account is given of laboratory experiments and theory on hydrodynamics of density and turbidity surge flows. The early hydrodynamic stages of such flows are simulated in the experiments and are dominated by drag forces on the characteristic 'heads' formed at their front. Experiments with flows in predeposited sediment bottoms indicated marked sensitivity of acceleration to bottom scouring, and that significant accelerations could have occurred in turbidity flows in the ocean; such as initiated by the Grank Banks earthquake. The final decay stages of turbidity flows are discussed theoretically; this stage is probably dominated by bottom friction. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 766 447 8/10 20/6 14/5
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Nephelometer Measurements, Hach Turbidimeter Measurements and Bottom Photographs from Conrad Cruise 15. (U)

DESCRIPTIVE NOTE: Technical rept., JUL 73 264P Sullivan,Lawrence ;Thorndike, Edward ;Ewing,Maurice ;Eittreim,Stephen ;
REPT. NO. TR-2, TR-8
CONTRACT: N00014-67-A-0108-0004, NSF-GA-27281
PROJ: NR-083-142

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN BOTTOM, PHOTOGRAPHS), OPTICAL INSTRUMENTS, UNDERWATER CAMERAS, OCEANOGRAPHIC DATA (U)
IDENTIFIERS: NEPHELOMETERS, TURBIDITY, TURBIDIMETERS (U)

The technical report is a bottom camera, nephelometer and in vitro turbidity data compilation collected during cruise 15 of the Research Vessel Robert D. Conrad from September 30, 1971 to August 1, 1972. A brief description of the instrumentation and data reduction procedures is presented. (Author) (U)

AD- 766 150 8/7
HAWAII INST OF GEOPHYSICS HONOLULU

Sediment Core Descriptions: R/V MAHI 1970 Cruise, Western Pacific. (U)

DESCRIPTIVE NOTE: Data rept. no. 24, JUN 73 122P Andrews,James E. ;
REPT. NO. HIG-73-7
CONTRACT: N00014-70-A-0016-0001, NSF-GA-17879

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Sponsored in part by Grants NSF-GA-28273, NSF-GA-28341, NSF-GA-1639, and NSF-GA-4083.

DESCRIPTORS: (*PACIFIC OCEAN, OCEAN BOTTOM), IDENTIFICATION, OCEAN BOTTOM SAMPLING, DEEP WATER, TABLES(DATA) (U)
IDENTIFIERS: LITHOLOGY, SEDIMENT CORES (U)

Barrel descriptions are presented of deep-sea sediment cores obtained by the Hawaii Institute of Geophysics on cruises of the R/V MAHI during 1970 in the western Pacific Ocean. Location of ship tracks and coring stations are shown. Core station data includes station number, core number, location, water depth, and length of cored sediment recovered. Descriptions include lithologic and structural sections, and descriptions of the sedimentary units encountered in each core. Nomenclature follows that established for deep-sea sediments by JOIDES for the Deep Sea Drilling Project. Recent modifications to the Hawaii Institute of Geophysics sediment analysis procedure are explained. (Modified author abstract) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 765 745 8/7
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Late Paleogene (Oligocene) and Neogene Planktonic Foraminiferal Biostratigraphy of the Atlantic Ocean (Lat. 30 Degrees N to Lat. 30 Degrees S). (U)

DESCRIPTIVE NOTE: Technical rept., JUN 73 106P Berggren,W. A. ;Amdurer,M. ;
REPT. NO. WHOI-73-34
CONTRACT: N00014-66-C-0241, NSF-GA-30723
PROJ: NR-083-004

UNCLASSIFIED REPORT

DESCRIPTORS: (*STRATIGRAPHY, *ATLANTIC OCEAN), SEDIMENTATION, MARINE GEOLOGY, OCEAN BOTTOM (U)

Approximately 120 planktonic foraminiferal species are recorded from late Paleogene (Oligogene (Oligocene) and Neogene sediments recovered by the Deep Sea Drilling Project (Legs 1-4) between lat. 30 degrees N and lat. 30 degrees S in the Atlantic Ocean. Particularly good oligocene and lower Miocene biostratigraphic sequences were recovered in the South Atlantic (Leg 3) and a nearly complete composite succession of Neogene sediments has been examined from the tropical Atlantic (Caribbean, Legs 4 and 15; Gulf of Mexico, Leg 1). South Atlantic late Paleogene and early Neogene planktonic foraminiferal assemblages exhibit a marked similarity with those from the Australasian region (New Zealand, SW Pacific). South Atlantic early Neogene assemblages are characterized by globigerinids, globoquadrinids and non-keeled globorotaliids. Late Neogene tropical assemblages are dominated by keeled globorotaliids. Within the Pliocene the sequential extinction of several taxa make a refinement of current planktonic foraminiferal zonation zonation possible and a six-fold zonation (Zones p11-6) is applied. (Author) (U)

AD- 765 149 8/3 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Northwest Pacific Ocean Waters in Winter. The Johns Hopkins Oceanographic Studies, Number 5, (U)

73 95P Reid,Joseph L. ;
CONTRACT: N00014-69-A-0200-6006

UNCLASSIFIED REPORT
Availability: Paper copy available from The Johns Hopkins University Press, Baltimore, Maryland 21218 PC$7.50.
SUPPLEMENTARY NOTE: Library of Congress Catalog Card No. 72-12351, International Standard Book No. 0-8018-1466-9.

DESCRIPTORS: (*PACIFIC OCEAN, *OCEANOGRAPHY), WIND, OCEAN CURRENTS, OCEANOGRAPHIC DATA, TEMPERATURE, SALINITY, DENSITY, OXYGEN, PHOSPHATES, SILICATES, NITRATES, PERIODIC VARIATIONS (U)
IDENTIFIERS: WINTER, *AIR WATER INTERACTIONS (U)

The Boreas expedition to the northwestern Pacific Ocean, Bering Sea, and Okhotsk Sea measured water characteristics in the upper 1500 m in the period from 27 January to 1 April 1966. The purpose of this study is to describe the winter characteristics and circulation of the northwestern Pacific Ocean as one contribution toward a general understanding of the world ocean. The attempt is to show what happens to the circulation under the intensified winter winds, to the thickness and structure of the upper layer under the effects of the winds and the winter cooling, and to the general distributions of the characteristics both in the upper layer and beneath. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 765 004 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Paleoclimatic Investigation of a Late Pleistocene Caribbean Deep-Sea Core: Comparison of Isotopic and Faunal Methods, (U)

JAN 73 31P Imbrie,John ;von Donk,Jan ; Kipp,Nilva G. ;
REPT. NO. LDGO-1962
CONTRACT: N00014-67-A-0108-0004
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Quaternary Research, v3 n1 p10-38 Jun 73.

DESCRIPTORS: (*PALEONTOLOGY, *FORAMINIFERA), (*CLIMATE, FORAMINIFERA), (*OCEAN BOTTOM SAMPLING, *CARIBBEAN SEA), RADIOACTIVE ISOTOPES, OXYGEN, NUMERICAL ANALYSIS (U)
IDENTIFIERS: *PALEOCLIMATOLOGY (U)

The paper compares two independent methods of quantitative paleoenvironmental inference applicable to deep-sea sediments. The first method is based on measurements of the ratio of oxygen isotopes (O18/O16) in the tests of fossil planktonic foraminifera, and interprets the ratio by means of an equation relating it to the isotopic composition and temperature of the water in which the shells grew. The second method is based on the percentage composition of planktonic foraminiferal faunas, and interprets mathematically defined faunal indices by means of equations relating them to temperature and other properties of the water in which the species live. (U)

AD- 764 963 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Geotechnical Properties of Ocean Sediments Recovered with Giant Piston Corer. 1. Gulf of Maine. (U)

DESCRIPTIVE NOTE: Technical rept., JAN 73 20P Silva,Armand J. ;Hollister, Charles D. ;
REPT. NO. WHOI-73-49, WHOI-Contrib-2953
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT

Availability: Pub. in the Jnl. of Geophysical Research, v78 n18 p3597-3616, 20 Jun 73.
SUPPLEMENTARY NOTE: Prepared in cooperation with Worcester Polytechnic Inst., Mass.

DESCRIPTORS: (*MAINE GULF, *OCEAN BOTTOM SAMPLING), OCEANOGRAPHIC EQUIPMENT, SOIL MECHANICS, SAMPLERS, SEDIMENTARY ROCK (U)
IDENTIFIERS: LITHOLOGY, SEDIMENTS, CORING (U)

A large-diameter (14 cm) long piston corer (20-40 meters) has been used successfully to obtain relatively undisturbed sediment samples in water depths from 80 to 5500 meters with recovery ratios ranging between 0.76 and 0.87. Visual observations and results of consolidation studies indicate that structural disturbance to the sediments was not severe, that it is normally consolidated, and that no postdepositional compaction occurred. Information and data contained in this report include the following: (1) some details on the coring device, including launch and recovery problems, (2) detailed geotechnical information on the sediment recovered on the Knorr-10 cruise, (3) preliminary data on physical properties of sediment recovered on the Knorr-27 cruise, (4) correlations between acoustic reflectors and physical properties, and (5) a brief discussion of some engineering and geological implications of the Knorr-10 results. (U)

AD- 764 646 8/3
RHODE ISLAND UNIV KINGSTON NARRAGANSETT MARINE LAB

The Net Circulation in the West Passage of Narragansett Bay. (U)

DESCRIPTIVE NOTE: Technical rept., MAR 73 109P Weisberg,Robert H. ;Sturges, Wilton , III;
REPT. NO. Ref-3-73
CONTRACT: N00014-68-A-0215-0003

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN CURRENTS, *NARRAGANSETT BAY), TIME SERIES ANALYSIS, TIDES, CORRELATION TECHNIQUES, WIND (U)

Narragansett Bay is a weakly stratified estuary comprised of three connecting passages of varying depths. The vertical distribution of horizontal velocity was observed in the West Passage using moored current meters. The instantaneous motion was characterized by semi-diurnal tidal currents of amplitude 25-60 cm/s. These currents exhibited a phase advance with depth (total water depth=12.8 m) ranging with lunar phase from 0-3 hrs. The primary objective of the study was the analysis of the net circulation, i.e., the motion exclusive of the periodic tides. The net current time series obtained by filtering out the tidal periodicities were found to be an order of magnitude less than the instantaneous motion and well correlated to the prevailing 2-10 m/s wind. For periodicities about two days, the squared coherence and phase between the longitudinal components of wind and net near surface current were 0.7 and 3 hours respectively. (Modified author abstract) (U)

AD- 764 612 8/3
TEXAS A AND M UNIV COLLEGE STATION DEPT OF OCEANOGRAPHY

Group Velocity in a Multi-Dimensional Space. (U)

DESCRIPTIVE NOTE: Technical rept., JUL 73 29P Ichiye,Takashi ;
REPT. NO. A/M-Ref-73-9-T
CONTRACT: N00014-68-A-0308-0002
PROJ: A/M-700

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN WAVES, HYDRODYNAMICS), PARTIAL DIFFERENTIAL EQUATIONS, SNELLS LAW, OCEAN BOTTOM TOPOGRAPHY, NUMERICAL ANALYSIS (U)
IDENTIFIERS: ROSSBY WAVES, GROUP VELOCITY, GRAVITY WAVES, INTERNAL WAVES (U)

Phase and group velocities of isotropic and anisotropic waves are expressed analytically by the frequency-wave number vector relations and graphically with frequency curves for a multiple-dimensional space. Both velocities are proved to be parallel for isotropic waves, thus leading to a conclusion that a group of isotropic waves are refracted by Snell's law. Superposition of two sine waves lead to the group velocity only when the two waves have the same direction. It is proved wrong to conclude from the superposition method that a group of gravity waves are refracted at a discontinuity by Snell's law with group velocity instead of phase velocity. In Appendix A is treated refraction of a group of two anisotropic waves, the internal gravity waves and the Rossby waves. In Appendix B is presented the mathematical derivation by the proponents of Snell's law with group velocity and their errors are pointed out. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 764 552 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY SAN DIEGO CALIF MARINE PHYSICAL LAB

Shipboard Cruise Report on Leg 10 of Expedition South Tow. (U)

DESCRIPTIVE NOTE: Summary rept., APR 73 20P Spiess,Fred N. ;Lonsdale, Peter ;Tyce,Robert C. ;Mudie,John D. ;
REPT. NO. SIO-Ref-73-10, MPL-U-8/73
CONTRACT: N00014-69-A-0200-6002, NSF-GA-31377
PROJ: NR-260-103

UNCLASSIFIED REPORT

DESCRIPTORS: (*PACIFIC OCEAN, *OCEAN BOTTOM TOPOGRAPHY), MARINE GEOLOGY, DEEP WATER, OCEAN CURRENTS, MANGANESE, SEDIMENTATION, EROSION, GEOPHYSICAL PROSPECTING (U)
IDENTIFIERS: MANGANESE NODULES, HYDROGRAPHIC SURVEYING, OCEANOGRAPHY, BATHYMETRY, SOUTH PACIFIC OCEAN (U)

During Scripps Expedition South Tow Leg 10, five small patches of the floor of the South Pacific north of Samoa were examined with the deeply towed instrument package of the Marine Physical Laboratory. The objective was to learn enough about the hydrography and geology in a range of high energy abyssal environments to understand the relationship between the two in both erosional and depositional regimes. This report describes operational aspects of the expedition, presents some data, and offers a few preliminary interpretations. (Modified author abstract) (U)

AD- 764 457 8/10 8/7
TEXAS A AND M UNIV COLLEGE STATION

Metamorphic Rocks from Northwestern Caribbean Sea, (U)

JAN 73 6P Pyle,Thomas E. ;Meyerhoff, A. A. ;Fahlquist,Davis A. ;Antoine,John W. ;McCrevey,John A. ;
REPT. NO. Contrib-540
CONTRACT: Nonr-2119(04), N00014-68-A-0308-0002

UNCLASSIFIED REPORT
Availability: Pub. in Earth and Planetary Science Letters, v18 p339-344 1973.
SUPPLEMENTARY NOTE: Prepared in cooperation with University of South Florida, St. Petersburg, Fla. Marine Science Inst. and Rice Univ., Houston, Tex. Dept. of Geology. Sponsored in part by Grants NSF-GA-31779, NSF-GA-1296, NSF-GA-4544, and NSF-GD-27258. Revision of report dated 29 Sep 72.

DESCRIPTORS: (*CARIBBEAN SEA, *MARINE GEOLOGY), METAMORPHIC ROCK, IGNEOUS ROCK, OCEAN BOTTOM TOPOGRAPHY, CUBA, PETROLOGY, SEDIMENTARY ROCK, STRUCTURAL GEOLOGY (U)
IDENTIFIERS: PROSPECTING, REFLECTION PROFILING (U)

During 1971, several dredge hauls were collected in the area between the Yucatan Peninsula-British Honduras, on the south and west, and Cuba on the northeast. One of the dredge hauls recovered metasediments which petrographically are very similar to the Early-Middle Jurassic San Cayetano Group of Pinar del Rio Province, westernmost Cuba. Interpretation of K-Ar dates of these rocks suggests that they are approximately 65 million years old. Therefore, the latest thermal event to affect them occurred during the 'Laramide' orogeny. The presence of these rocks southwest of Cuba, close to the Yucatan Peninsula and British Honduras, indicates that the Greater Antilles orthogeosyncline extends to the Central America mainland. (Author) (U)

AD- 763 804 8/3
NAVAL ACADEMY ANNAPOLIS MD DEPT OF ENVIRONMENTAL SCIENCES

Oceanic Random Motion. A State of the Art Review, (U)

MAY 73 60P Williams,Jerome ;

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN WAVES, TURBULENCE), STATE-OF-THE-ART REVIEWS, MICROBAROMETRIC WAVES, POWER SPECTRA, SURFACES, WIND, TIDES, INERTIA, DENSITY, NAVAL RESEARCH, EQUATIONS OF MOTION (U)
IDENTIFIERS: SEICHES, INTERNAL WAVES, SURFACE WAVES, *TURBULENT FLOW (U)

The present knowledge regarding random oceanic motion is summarized. For convenience random motion is devided into turbulence, surface waves, and internal waves. The characteristics of these phenomena are examined along with some of the basic assumptions usually made to simplify their study. In particular, the validity of the usual assumptions of isotropy and stationarity are questioned. The difference between field and laboratory results is indicated, and the shortcomings of laboratory studies are emphasized. Experimental results in certain areas are reviewed to show reasonable approximations to presently accepted theory. Energy sources such as the wind and tide are relatively easy to pinpoint, but other sources giving rise to inertial period fluctuations and seiching are somewhat more difficult to explain. The relationship between the amount of energy contained in turbulent flow as compared to that in the mean flow also varies widely. (Modified author abstract) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 763 745 8/10 8/1
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

R/V THOMAS G. THOMPSON Cruises 035, 037, 046, and 066. (U)

DESCRIPTIVE NOTE: Technical rept. Jan 69-Mar 72,
FEB 73 23P Lowman,Dorothy M. ;
Codispoti,Louis A. ;
REPT. NO. Ref-M72-59, TR-284
CONTRACT: N00014-67-A-0103-0014, Nonr-477(37)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Sponsored in part by Grants NSF-GA-10084, NSF-GB-8648, NSF-GB-7394 and NSF-GA-2487.

DESCRIPTORS: (*OCEANOGRAPHIC DATA, PACIFIC OCEAN), HYDROGRAPHIC SURVEYING, SALINITY, TEMPERATURE, SEDIMENTATION, NITRITES, SAMPLING, CARIBBEAN SEA, MEDITERRANEAN SEA, BLACK SEA (U)
IDENTIFIERS: NORTH PACIFIC OCEAN, HYDROGRAPHIC SURVEYING, OCEANOGRAPHY, DISSOLVED GASES (U)

The report summarizes Thomas G. Thompson Cruises 035, 037, 046, and 066. Its main purpose is to acquaint other investigators with the methods employed for the various observations and to inform them of the availability of the data. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 763 591 8/10
OREGON STATE UNIV CORVALLIS SCHOOL OF OCEANOGRAPHY

Hydrographic, Chemical and Optical Observations from Legs 4 and 5, YALOC-71, (U)

MAY 73 386P Plank,William S. ;Anderson, James J. ;Pak,Hasong ;
REPT. NO. Data-54, Ref 73-7
CONTRACT: N00014-67-A-0369-0007
PROJ: NR-083-102

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEANOGRAPHIC DATA, *PACIFIC OCEAN), TEMPERATURE, WIND, OCEAN WAVES, METEOROLOGICAL PHENOMENA, SALINITY, OXYGEN, PHOSPHORUS, NITRATES, SILICATES, GALAPAGOS ISLANDS, SCATTERING (U)
IDENTIFIERS: TURBIDITY, CROMWELL CURRENT (U)

Hydrographic, chemical and optical data collected on legs 4 and 5 (November and December, 1971) of YALOC-71 in the vicinity of the Panama Basin are presented. The measurements were made for two purposes -- to study the behavior of the Cromwell Current near the Galapagos Islands and to study the suspended particulate matter in the Panama Basin. (Author) (U)

AD- 763 350 8/10 4/2 8/1
INTER-AMERICAN TROPICAL TUNA COMMISSION LA JOLLA CALIF

Application of High Resolution Infrared and Visual Data to Investigate Changes in the Relationship between Sea Surface Temperatures and Cloud Patterns over the Eastern Tropical Pacific. (U)

DESCRIPTIVE NOTE: Final rept.,
JUN 73 112P Stevenson,Merritt R. ;
Miller,Forrest R. ;
CONTRACT: N00014-72-C-0360

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated Apr 72, AD-743 114. Errata sheet inserted.

DESCRIPTORS: (*OCEANOGRAPHIC DATA, INFRARED DETECTORS), (*MARINE METEOROLOGY, CLOUD COVER), (*PACIFIC OCEAN, SURFACE TEMPERATURE), SPACEBORNE, PHOTOGRAPHY, AERIAL PHOTOGRAPHY, FISHES, ATMOSPHERIC TEMPERATURE, WATER VAPOR, PHOTOINTERPRETATION, SCIENTIFIC SATELLITES, CLIMATE (U)
IDENTIFIERS: NIMBUS 4 SATELLITE, OCEAN SURFACE, *REMOTE SENSING, FISHERIES, TUNAS (U)

Results on the application of infrared data from NASA and NOAA satellites for use in the field of fishery oceanography are given. Results of Project Little Window 2 (LW-2) held in the Gulf of California are discussed. Atmospheric attenuation factors are discussed in terms of published research and in terms of the newly acquired field data. A general review of the numerical techniques used for handling infrared data is given. In an application of NIMBUS 4, THIR data in the eastern tropical Pacific, information on the moist marine layer was used to estimate atmospheric attenuation factors, based on curves for model atmospheres. Results of the comparison are discussed in terms of the predicted observed temperature differences. The importance of surface thermal fronts to biota in general and to the tuna fishery in particular, in the eastern tropical Pacific is discussed. Several numerical techniques for producing charts that emphasize thermal gradient features are discussed and results are given for the LW-2 experiment. (Modified author abstract) (U)

AD- 762 754 8/10
NAVAL UNDERWATER SYSTEMS CENTER NEWPORT R I

Measurements of Sediment Sound Velocity in Carbonate Sediments from the Whiting Basin, Puerto Rico. (U)

DESCRIPTIVE NOTE: Technical rept.,
APR 73 12P Morton,Robert W. ;
REPT. NO. NUSC-4368
PROJ: UF52-552-102

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN BOTTOM, ACOUSTIC PROPERTIES), (*CARIBBEAN SEA, OCEAN BOTTOM SAMPLING), PHYSICAL PROPERTIES, POROSITY, PARTICLE SIZE, APPARENT DENSITY, CARBONATE MINERALS, FORAMINIFERA (U)
IDENTIFIERS: ACOUSTIC VELOCITY, SEDIMENTS, CORING (U)

A series of sediment cores were obtained from the Whiting Basin southeast of Puerto Rico to investigate the factors affecting the velocity of sound in marine carbonate deposits. The cores indicated that the deposits in the Whiting Basin are similar to abyssal plain deposits with lenticular turbidite sequences alternating with pelagic sediments. Normal methods for predicting sound velocity from the physical properties of the deposits were found to be inaccurate for these samples. The established relationships of grain size and porosity to sound velocity were invalid because the sands found in the cores consisted of hollow foram tests, causing high porosity independent of grain size. The rigidity of the deposit was the most significant factor determining sediment sound velocity and was itself controlled by (1) the sediment source, (2) transportation effects, (3) the packing of the deposit, and (4) the presence or absence of intergranular cementation. (Modified author abstract) (U)

AD- 762 529 8/10
HARVARD UNIV CAMBRIDGE MASS DIV OF ENGINEERING AND APPLIED PHYSICS

Reports in Meteorology and Oceanography Number 6. The Fused Quartz Pressure Gauge. III. Measurements of Pressure Fluctuations in the MODE-I Area, August-December, 1972, and High Pressure Calibration, (U)

MAY 73 27P Baker,D. James , Jr;
CONTRACT: N00014-67-A-0298-0011, NSF-GX-28846
PROJ: NR-083-201

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-762 058.

DESCRIPTORS: (*UNDERWATER EQUIPMENT, PRESSURE GAGES), (*OCEANOGRAPHIC DATA, ATLANTIC OCEAN), DEEP WATER, TEMPERATURE, PRESSURE, QUARTZ, PERIODIC VARIATIONS, TIDES, CALIBRATION (U)
IDENTIFIERS: *BOURDON TUBES (U)

During the period July 1, 1972 to December 31, 1972, the construction of five fused quartz bourdon tube deep sea pressure gauges was completed and they were deployed at sea in the MODE-I area (28 degrees N, 69 degrees 40'W) during two cruises of the R/V EASTWARD. Two one-week records and one three-month record were obtained from three different gauges; on one gauge the sensor was broken by the implosion of a deep sea camera window; and one instrument was not recovered, due to a faulty release. In summary, the data obtained is very promising. The long record has been spectrally analyzed and the tidal amplitudes and phases are in good agreement with measurements at Bermuda, theoretical calculations, and a short-term measurement with a different gauge by Dahlen and Wunsch. The temperature signal shows surprising variability, with occasional changes of 0.056C in 12 hours. (Modified author abstract) (U)

AD- 762 070 8/10 9/2
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Synthetic Bathymetric Profiling System (SYNBAPS). (U)

DESCRIPTIVE NOTE: Technical rept.,
MAY 73 147P Van Wyckhouse,Roger J. ;
REPT. NO. NOO-TR-233

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEANOGRAPHIC DATA, *COMPUTER PROGRAMS), (*OCEAN BOTTOM TOPOGRAPHY, DATA PROCESSING), AUTOMATION (U)
IDENTIFIERS: *BATHYMETRY, CDC 3800 COMPUTERS, SEAMOUNTS, FORTRAN (U)

The Synthetic Bathymetric Profiling System (SYNBAPS) consists of 10 FORTRAN IV computer programs, a random-access storage device, and an initial bathymetric data base of over 3 million data points. SYNBAPS is designed for rapid generation of random omnidirectional bathymetric profiles in digital form along great-circle paths. The initial data base will cover most of the Northern Hemisphere and will be extended to other regions as suitable bathymetric contour charts become available. SYNBAPS will provide bathymetric profiles at about one-fifth the cost and one-hundredth the time of present semiautomated methods. (Modified author abstract) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 761 999 20/4 8/3
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Bubble Transport Theory with Application to the Upper Ocean. (U)

DESCRIPTIVE NOTE: Technical rept.,
APR 73 62P Garrettson,Garrett A. ;
REPT. NO. NPS-61Gr73041A

UNCLASSIFIED REPORT

DESCRIPTORS: (*BUBBLES, TRANSPORT PROPERTIES), (*OCEANOGRAPHY, BUBBLES), THEORY, HYDRODYNAMICS, EQUATIONS OF MOTION, MATHEMATICAL MODELS, DIFFUSION, DRAG (U)

The formalism of transport theory is adapted to a general description of bubble populations in a moving fluid. The bubble distribution, as a function of position, velocity, radius, and time, satisfies a Boltzmann type transport equation that is derived and then formally solved by the method of characteristics. Properties of the medium are specified and a bubble dynamics model is chosen. General expressions are written for bubble acceleration and radius change rate, and known models of bubble gas diffusion and drag are summarized for gas bubbles in liquids. Application to the upper ocean is discussed and illustrated with some sample calculations. (Modified author abstract) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 761 670 8/1
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

Ships of Opportunity Cruises, 1972. (U)

DESCRIPTIVE NOTE: Preliminary cruise rept. 2 Feb-5 Jul 72,
MAR 73 8P Tennant,David A. ;
REPT. NO. PCR-34, Ref-M73-19
CONTRACT: N00014-67-A-0103-0014

UNCLASSIFIED REPORT

DESCRIPTORS: (*PACIFIC OCEAN, *MARINE BIOLOGY), SAMPLING, SEA WATER, SOLAR RADIATION, CHLOROPHYLLS, SURFACE TEMPERATURE, PLANKTON (U)
IDENTIFIERS: OCEAN SURFACE, PRIMARY BIOLOGICAL PRODUCTIVITY (U)

These cruises were designed to provide information on variables necessary to predict levels of organic production using mathematical models, and to determine the timing and extent of the spring bloom in the North Pacific Ocean. (U)

AD- 761 647 8/10 9/2
CALSPAN CORP BUFFALO N Y

A Semi-Automatic System for Digitizing Bathymetry Charts. (U)

DESCRIPTIVE NOTE: Final rept.,
JUN 73 31P Solosko,R. B. ;
REPT. NO. CALSPAM-VF-5206-X-1
CONTRACT: N00014-72-C-0466

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN BOTTOM TOPOGRAPHY, MAPPING), (*OCEANOGRAPHIC DATA, DATA PROCESSING), DEPTH FINDING, DIGITAL SYSTEMS, DISPLAY SYSTEMS (U)
IDENTIFIERS: *BATHYMETRY (U)

In support of the Long Range Acoustic Propagation Project (LRAPP), Office of Naval Research, Calspan Corporation has implemented a semi-automatic system for digitizing bathymetry charts. This system encodes the contour depth information in the following way. The bathymetry chart is overlayed by a set of parallel lines called track lines. The intersections of these track lines with the contour lines on the chart define the locations of points where the depth information is to be encoded. This bathymetry digitizing system will be used to digitize the 600 bathymetry charts which describe the undersea topography of the world. (Modified author abstract) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 761 566 8/3 8/10
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

On the Water Exchange between the Red Sea and the Gulf of Aden (O Vodoobmene Mezhdu Krasnym Morem i Adenskim Zalivom), (U)

73 11P Seryi,V. V. ;
REPT. NO. NOO-Trans-546

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. of Okeanologicheskie Issledovaniya (USSR) n19 p195-200 1968, by V. Astvazaturov.

DESCRIPTORS: (*OCEAN CURRENTS, *RED SEA), TRANSPORT PROPERTIES, SALINITY, HEAT TRANSFER, INTERACTIONS, OCEANOGRAPHIC DATA, DEEP WATER, SHALLOW WATER, SURFACE TEMPERATURE, HALOGEN COMPOUNDS, SEA WATER, OCEAN BOTTOM TOPOGRAPHY, USSR (U)
IDENTIFIERS: *ADEN GULF, THERMOHALINE CIRCULATION, TRANSLATIONS (U)

The paper is based on data collected during a 3-year period by VLADIMIR VOROB'YEV (1961-1964) along a cross section at the northeastern limit of Bab el Mandeb (Strait). Indirect methods permitted definition of sharp seasonal intensity variations of deep water flowing from the Red Sea into the Gulf of Aden, as well as the causes of these variations. Thermohaline and hydrochemical properties of Red Sea water change during the year in proportion to the degree of transformation of the water in Bab el Mandeb (Strait). (Modified author abstract) (U)

AD- 761 565 8/10
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Intermediate Subarctic Waters in the Northern Part of the Atlantic Ocean (Promezhutochnye Subarkticheskie Vody v Severnoi Chasti Atlanticheskogo Okeana). (U)

73 28P Bubnov,V. A. ;
REPT. NO. NOO-Trans-545

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. of Okeanologicheskie Issledovaniya (USSR) n19 p135-153 1968, by V. Astvazaturov.

DESCRIPTORS: (*OCEANOGRAPHIC DATA, *ATLANTIC OCEAN), TEMPERATURE, SALINITY, INTERACTIONS, DEEP WATER, DENSITY, EVAPORATION, SURFACE TEMPERATURE, OCEAN BOTTOM TOPOGRAPHY, ARCTIC REGIONS, STABILITY, ATMOSPHERIC PRECIPITATION, CORRELATION TECHNIQUES, PACIFIC OCEAN, USSR (U)
IDENTIFIERS: *LANDFORMS, *WATER, NORTH ATLANTIC OCEAN, TRANSLATIONS (U)

The basic characteristics of Subarctic Intermediate Waters in the North Atlantic are studied on the basis of IGY data. The existence of north and south variations of these waters, which differ in their thermal characteristics, is established. Ideas about the origin and distribution of these waters in the Pacific and Atlantic are presented. The differences in the hydrology of these waters in the Pacific and Atlantic, as well as originating causes of these differences, are discussed in this article. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 761 184 8/10 8/8
JOHNS HOPKINS UNIV BALTIMORE MD CHESAPEAKE BAY INST

Data Bank Inventory. Volume II. Chesapeake Bay. Edition 1, 1949 through 1970. (U)

DESCRIPTIVE NOTE: Data bank rept. no. 2,
JAN 73 54P Feister,Carol ;Karweit, Michael ;
REPT. NO. Ref-73-5
CONTRACT: N00014-67-A-0163-0006
PROJ: NR-083-016

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-761 183.

DESCRIPTORS: (*CHESAPEAKE BAY, *OCEANOGRAPHIC DATA), INLAND WATERWAYS, ESTUARIES, TEMPERATURE, SALINITY, CHLOROPHYLLS, OXYGEN, PH FACTOR, PHOSPHATES (U)
IDENTIFIERS: DISSOLVED GASES (U)

The Chesapeake Bay Institute (CBI) maintains a bank of information consisting of all oceanographic data collected by CBI on the Chesapeake Bay and its tributaries. Since 1949 CBI has gathered data both for specific projects and for general surveys. Much of it has been published as individual cruise reports (CBI Data Reports 1-50), but never collated in a way to make it generally accessible for secondary use. Recently a complete reorganization of this data bank was undertaken to promote better utilization of its contents. This report describes the contents of the Chesapeake Bay portion of CBI data bank. (U)

AD- 760 709 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Atlas of Monthly Mean Sea Surface and Subsurface Temperatures in the Gulf of California, Mexico, (U)

73 98P Robinson,Margaret K. ;
CONTRACT: N00014-69-A-0200-6006

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Pub. as San Diego Society of Natural History Memoir no. 5 p1-97 1973.

DESCRIPTORS: (*PACIFIC OCEAN, SURFACE TEMPERATURE), (*BATHYTHERMOGRAPH DATA, PACIFIC OCEAN), SEA WATER, THERMOCLINES, PERIODIC VARIATIONS, CORRELATION TECHNIQUES, SALINITY, COASTAL REGIONS, OCEANOGRAPHIC DATA (U)
IDENTIFIERS: OCEAN SURFACE, *CALIFORNIA GULF (U)

The atlas contains monthly mean sea temperature charts of the surface and four subsurface levels of the Gulf of California and the Pacific Ocean adjacent to the West Coast of Baja California, Mexico. The charts are presented in an expanded scale to show the complicated seasonal changes in sea temperature in the Gulf of California, and the great contrast between these temperatures and those on the Pacific side of Baja California. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0MO7

AD- 760 704 8/10 8/3
NEW YORK UNIV BRONX DEPT OF METEOROLOGY AND OCEANOGRAPHY

Research on Problems in Physical Oceanography. (U)

DESCRIPTIVE NOTE: Final rept. 1 Sep 72-30 Jun 73,
MAR 73 60P Neumann,Gerhard ;Pierson, Willard J. ;Posmentier,Eric ;Cardone,Vincent J. ;Friedrich,Hans ;
CONTRACT: N00014-67-A-0467-0022

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEANOGRAPHY, SCIENTIFIC RESEARCH), PHYSICAL PROPERTIES, SEA WATER, CHEMICAL PROPERTIES, OCEAN CURRENTS, WIND, INTERACTIONS, OCEAN WAVES, REFRACTION, SALINITY, ATLANTIC OCEAN, MATHEMATICAL MODELS, DETECTORS, NAVAL RESEARCH, MARINE METEOROLOGY (U)
IDENTIFIERS: *OCEAN CIRCULATION, *AIR WATER INTERACTIONS, REMOTE SENSING (U)

The five major program areas supported by this contract are reviewed. References to published papers and papers in various stages of preparation are given. Sample charts of E, P and E-P and the harmonic analysis of the E-P fields for the Equatorial Atlantic are given and ways to study variation in sub-surface salinity are described. The ways data for extreme stability conditions and high wind speeds were analysed in a study of air sea interaction are described. The study of structured fluids is progressing toward the long range goal of more realistic ocean circulation models in terms of a better representation of small scale and meso-scale eddies. The present status treats non-stationary flow of microdeformable fluids. A state of the art model of the North Atlantic is described in preliminary form with many interesting results. (Modified author abstract) (U)

AD- 760 213 8/10
TEXAS A AND M UNIV COLLEGE STATION

Comparison of Geological and Engineering Parameters of Marine Sediments, (U)

72 14P Bouma,Arnold H. ;Sweet, William E. , Jr.;Dunlap,Wayne A. ;Bryant, William R. ;
REPT. NO. Contrib-488
CONTRACT: N00014-68-A-0308-0002, NSF-GA-1296

UNCLASSIFIED REPORT
Availability: Paper copy available from Offshore Technology Conference, 6200 N. Central Expressway, Dallas, Texas 75206.
SUPPLEMENTARY NOTE: Pub. in Proceedings of Annual Offshore Technology Conference (4th) Held in Houston, Tex., 1-3 May 72, Paper no. OTC-1514.

DESCRIPTORS: (*OCEAN BOTTOM SAMPLING, SOIL MECHANICS), (*GEOPHYSICAL PROSPECTING, *OCEAN BOTTOM), MEXICO GULF, ELECTRICAL RESISTANCE, COMPRESSIVE PROPERTIES, DENSITY, POROSITY (U)
IDENTIFIERS: SEDIMENTS, SEISMIC PROFILING (U)

Various tests are conducted on sediment cores taken from the Gulf of Mexico in order to determine possible correlations between fast survey techniques and time-consuming laboratory tests. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 760 209 8/1
ARCTIC INST OF NORTH AMERICA WASHINGTON D C

Studies of Primary Production in the Eastern Bering Sea. (U)

DESCRIPTIVE NOTE: Technical rept.,
72 21P McRoy,C. Peter ;Goering, John J. ;Shiels,William E. ;
REPT. NO. AINA-ONR-397:6
CONTRACT: N00014-70-A-0219-0001
PROJ: NR-307-105

UNCLASSIFIED REPORT
Availability: Pub. in Biological Oceanography of the Northern North Pacific Ocean, p199-216 1972.
SUPPLEMENTARY NOTE: Prepared in cooperation with Alaska Univ., College. Inst. of Marine Science Rept. no. IMS-Contrib-87, under Grants NSF-GB-8274, NSF-GB-7800, NSF-GB-8636, NSF-GB-2678, and NSF-GB-5469.

DESCRIPTORS: (*BERING SEA, *MARINE BIOLOGY), COASTAL REGIONS, MEASUREMENT, PLANKTON, ALEUTIAN ISLANDS (U)

Measurements of productivity of phytoplankton were made during February, March, June, and July at numerous stations in the Eastern Bering Sea. Measurements were also obtained in June at a Bering Strait station and in summer from a lagoon on the Alaskan Coast. The annual cycle of primary production in the Bering Sea apparently begins with a bloom of non-planktonic algae in the sea ice. This late winter bloom in the ice is followed by a phytoplankton bloom in the water column in spring. (Author Modified Abstract) (U)

AD- 760 208 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Paleo-Climatic Events Indicated by Mineralogical Changes in Deep-Sea Sediments, (U)

JUN 72 12P Jacobs,Marian B. ;Hays, James D. ;
REPT. NO. LDGO-1878
CONTRACT: N00014-67-A-0108-0004
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Sedimentary Petrology, v42 n4 p889-898 Dec 72.
SUPPLEMENTARY NOTE: Revision of report dated 3 Mar 72.

DESCRIPTORS: (*OCEAN BOTTOM SAMPLING, *CLAY MINERALS), (*PACIFIC OCEAN, *STRATIGRAPHY), SEDIMENTATION, MONTMORILLONITE, KAOLINITE, GLACIERS, MARINE GEOLOGY (U)
IDENTIFIERS: *PALEOCLIMATOLOGY, CENOZOIC ERA, CHLORITE SEDIMENTS, *SEDIMENTARY PETROLOGY, ILLITE (U)

The paper presents mineralogical data for Cenozoic equatorial Pacific deep-sea cores which contain continuous depositional records from upper Middle Miocene through Pleistocene time. The high resolution stratigraphy of these cores permits study of the changes with time of their mineral components. Mineralogical changes that occur in deep-sea sediments may be related to changes in the input from land and therefore can serve as indicators of how various parts of the earth's surface responded to climatic change. This paper traces in well-dated cores the evolution of the clay mineral assemblage in the equatorial Pacific from Middle Miocene to Recent. (U)

AD- 760 207 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Two Small Crustal Plates in the South Pacific near Easter Island, (U)

AUG 72 9P Herron,Ellen M. ;
REPT. NO. LDGO-1842
CONTRACT: N00014-67-A-0108-0004
PROJ: NR-083 142

UNCLASSIFIED REPORT
Availability: Pub. in Nature Physical Science, v240 n98 p35-37, 13 Nov 72.

DESCRIPTORS: (*STRUCTURAL GEOLOGY, *PACIFIC OCEAN), LITHOSPHERE, OCEAN BOTTOM (U)
IDENTIFIERS: *OCEANIC CRUST, *PLATE TECTONICS, CONTINENTAL DRIFT (U)

Limited marine and earthquake seismic data suggest that two small crustal plates may now exist in the South Pacific centered at 24 degrees and 34 degrees S. These small plates may have existed for only the last 3 m.y., and may reflect a continuing instability of the triple junction of the Pacific, Antarctic and Nasca Plates. The alternative interpretation of the marine data in terms of a single ridge offset by major transform faults does not agree well with the seismic data, nor with the spreading rate data. A very complex history is suggested by the anomalous spreading rates, and the presence nearby of major volcanic lineaments. (Author) (U)

AD- 760 087 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Postglacial Iron-Rich Crusts in Hemipelagic Deep-Sea Sediment. (U)

DESCRIPTIVE NOTE: Journal article,
OCT 72 13P McGeary,David F. R. ; Damuth,John E. ;
REPT. NO. LDGO-1928
CONTRACT: N00014-67-A-0108-0004, NSF-GA-27281
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Geological Society of America Bull., v84 p1201-1212 Apr 73.
SUPPLEMENTARY NOTE: Prepared in cooperation with California State Univ., Sacramento. Dept. of Geology, Contracts N00014-66-C-0241, Nonr-1841(74), Grant NSF-GA-1077. Revision of report dated 12 May 72. Sponsored in part by Grant NSF-GA-29460.

DESCRIPTORS: (*OCEAN BOTTOM, SEDIMENTATION), ATLANTIC OCEAN, IRON OXIDES, GEOLOGIC AGE DETERMINATION, MARINE GEOLOGY, FORAMINIFERA, OXIDATION REDUCTION REACTIONS (U)

An iron-rich crust separates terrigenous hemipelagic lutites and turbidites from overlying pelagic foraminiferal oozes and lutites on the Amazon abyssal fan and adjacent continental rise and abyssal plains. This crust is found over wide areas of the western equatorial Atlantic as well as in many other regions of the world. Its formation marks the end of terrigenous hemipelagic and turbidite deposition. The crust is always post-glacial, and occurs at or very near the Pleistocene-Holocene boundary. (Author Modified Abstract) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 760 076 8/7
LEHIGH UNIV BETHLEHEM PA

In-Place Geotechnical Measurements from Submersible ALVIN in Gulf of Maine Soils, (U)

72 8P Perlow,Michael , Jr.; Richards,Adrian F. ;
CONTRACT: N00014-67-A-0370-0005
PROJ: NR-083-248

UNCLASSIFIED REPORT
Availability: Pub. in Proceedings of the Annual Offshore Technology Conference (4th) Held in Houston, Tex., 1-3 May 72, pI-333--I-340, Paper no. OTC-1543.
SUPPLEMENTARY NOTE: Prepared in cooperation with Woods Hole Oceanographic Institution, Mass., under contract N00014-71-C-0107, NOAA-1-35357.

DESCRIPTORS: (*OCEAN BOTTOM SAMPLING, *UNDERWATER VEHICLES), MARINE GEOLOGY, EARTH HANDLING EQUIPMENT, PROBES, DENSITY, PHYSICAL PROPERTIES, PENETRATION (U)
IDENTIFIERS: MANNED SUBMERSIBLES, ALVIN VESSEL, BULK DENSITY, SEDIMENTS, SHEAR TESTS (U)

Direct measurements of bulk density and penetration resistance, and indirect measurements of shear strength and water content in the Wilkinson and Murray Basins were made using the small submersible Alvin in July 1971. A probe consisting of a nuclear transmission densitometer and a static cone penetrometer was adapted for use on the submersible. A total of 10 test penetrations in 240-247 m water depths were made during three dives. The Alvin investigations showed that a small submersible is capable of developing the reaction force needed to penetrate a relatively large probe greater than 1 m in soft clay. (Author Modified Abstract) (U)

AD- 760 075 8/7
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

An Extinct Spreading Centre in the Philippine Sea. (U)

DESCRIPTIVE NOTE: Technical rept., SEP 72 5P Ben-Avraham,Z. ;Bowin,C. ; Segawa,J. ;
REPT. NO. WHOI-73-29
CONTRACT: N00014-66-C-0241, NSF-G35029
PROJ: NR-083-004

UNCLASSIFIED REPORT

Availability: Pub. in Nature, v240 n5382 p453-455, 22 Dec 72.
SUPPLEMENTARY NOTE: Prepared in cooperation with Tokyo Univ., Nakano (Japan). Ocean Research Inst.

DESCRIPTORS: (*OCEAN BOTTOM TOPOGRAPHY, *PACIFIC OCEAN), OCEANOGRAPHIC DATA, GRAVIMETRIC ANALYSIS, MARINE GEOLOGY (U)
IDENTIFIERS: MAGNETIC ANOMALIES, OCEANS, *OCEAN RIDGES, PLATE TECTONICS, *SEA FLOOR SPREADING, ANOMALIES, GRAVITY, EVOLUTION(DEVELOPMENT) (U)

An extinct ocean floor spreading centre identified by a topographic ridge has been discovered in the West Philippine Basin. Evidence of active spreading during the Mesozoic explains the early evolution of the Western Pacific and some marginal seas. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 760 004 8/3
ALASKA UNIV COLLEGE

Arctic Storm Surge and Tidal Experiment. (U)

DESCRIPTIVE NOTE: Final technical rept. 1 Jun 71-31 Dec 72, DEC 72 11P Matthews,J. B. ;McGregor, R. ;
CONTRACT: N00014-67-A-0317-0004, ARPA Order-1783
PROJ: NR-307-346

UNCLASSIFIED REPORT

DESCRIPTORS: (*TIDES, *ARCTIC REGIONS), STORMS, COASTAL REGIONS, ALASKA (U)
IDENTIFIERS: POINT BARROW, SEA LEVEL, STORM SURGES (U)

ARPA has sponsored an on-going project to operate two tide gauges simultaneously on the Arctic coast of Alaska for one year. The project operated one gauge at Point Barrow throughout the contract period and under a no-cost 6-month extension of the contract operated a gauge at Oliktok Point. The original objectives of the experiment; to obtain simultaneous tide gauge data for the arctic Alaskan coast were therefore fulfilled. A test of a bourdon tube 'Filloux' type gauge was made at Point Barrow simultaneously with 'Bubbler' gauge measurements. The original raw data were reduced to computer compatible form, plotted, checked and corrected. The corrected data are now stored on tape for further evaluation. (Author Modified Abstract) (U)

AD- 759 992 13/10 8/7
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Advanced Marine Technology. (U)

DESCRIPTIVE NOTE: Technical progress rept. 1 Feb-31 Jul 72,
FEB 73 83P Aldrich,Thomas C. ;Ballard, Robert D. ;Brown,Carl O. ;Luyendhk,Bruce P. ;McCamis,Marvin J. ;
REPT. NO. WHOI-73-20
CONTRACT: N00014-71-C-0284
PROJ: NR-293-008

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-754 445.

DESCRIPTORS: (*MARINE GEOPHYSICS, *UNDERWATER VEHICLES), (*OCEAN BOTTOM SAMPLING, UNDERWATER VEHICLES), MARINE SAFETY EQUIPMENT, UNDERWATER NAVIGATION, SURVEYING(GEOGRAPHIC), GEOMAGNETISM, GRAVITY, DRILLS (U)
IDENTIFIERS: MAGNETIC SURVEYS, MANNED SUBMERSIBLES, ALVIN VESSEL, GRAVIMETRIC PROSPECTING (U)

The report is on the following projects in advanced marine technology: Submerged navigation and submersible instrumentation; Handling and transfer at sea; Bottom reconnaissance and a detailed site survey by research submersible; Near bottom magnetic studies using a deep submersible; Near bottom gravity studies from a deep submersible; Self contained deep sea rock drill; and Self contained ancillary modular platform. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 759 878 8/3 13/2
DELAWARE UNIV NEWARK

Research in the Coastal and Oceanic Environment. (U)

DESCRIPTIVE NOTE: Annual status rept. 1 Sep 70-31 Aug 71,
SEP 71 34P Gaither,William S. ;
REPT. NO. CMS-3MD038
CONTRACT: N00014-69-A-0407
PROJ: NR-388-096

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Supersedes report dated Sep 71, AD-738 930.

DESCRIPTORS: (*OCEAN WAVES, BEACHES), (*COASTAL REGIONS, PROTECTION), TRANSPORT PROPERTIES, SEDIMENTATION, CONTINENTAL SHELVES, TIDES, PLANTS(BOTANY), MICROMETEOROLOGY, GEOCHEMISTRY, SOILS, EROSION, BREAKWATERS, STRUCTURES, DELAWARE, NEW JERSEY, MARYLAND, TABLES(DATA) (U)
IDENTIFIERS: LITTORAL ZONE, AIR WATER INTERACTIONS, BEACH EROSION, COASTAL ENGINEERING, REMOTE SENSING, SHORE PROTECTION (U)

Progress during the second year of a multi-disciplinary study of a section of the Atlantic seacoast is summarized. New knowledge of coastal geology and geologic history has been developed, and the properties of soils sediments in nearshore, beach, and backshore locations have been more fully determined. Continued theoretical investigations of wave action, model studies of sedimentary processes and underground water behavior, and the results of additional observations of vegetative growth and of surface energy exchanges are reported. Future objectives, particularly in the area of coastal zone remote sensing, are outlined. (Author) (U)

AD- 759 765 20/1
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Rapid Computation by Wave Theory of Propagation Loss in the Arctic Ocean. (U)

DESCRIPTIVE NOTE: Technical rept., MAR 73 103P Kutschale,Henry W. ;
REPT. NO. TR-8
CONTRACT: N00014-67-A-0108-0016
PROJ: NR-307-320

UNCLASSIFIED REPORT

DESCRIPTORS: (*ARCTIC OCEAN, *UNDERWATER SOUND), SOUND TRANSMISSION. SEA ICE, SURFACE ROUGHNESS, VELOCITY, OCEAN BOTTOM TOPOGRAPHY, FOURIER ANALYSIS, THEOREMS, DENSITY, NAVAL RESEARCH (U)
IDENTIFIERS: *UNDERWATER SOUND TRANSMISSION (U)

A rapid, accurate method was developed of computing propagation loss as a function of range in the ice covered Arctic Ocean. Input parameters to the propagation model are source and detector depth, wave frequency, ice roughness, bottom topography, and the velocity structure as a function of depth in the ice, water, and bottom. Computation is done by direct integration of the exact integral solution of the wave equation derived from a harmonic point source located in a multilayered, interbedded liquid-solid half space. The integration technique, introduced by H. W. Marsh, employs the Fast Fourier Transform for very rapid evaluation of the integral solution. (Author Modified Abstract) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 759 618 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Internal-Inertia Waves in a Fluid of Variable Depth, (U)

NOV 71 11P McKee,W. D. ;
REPT. NO. WHOI-73-19, WHOI-Contrib-2892
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT
Availability: Pub. in the Proceedings of the Cambridge Philosophical Society, v73 p205-213 1973.

DESCRIPTORS: (*OCEAN WAVES, EQUATIONS OF MOTION), PARTIAL DIFFERENTIAL EQUATIONS, APPROXIMATION(MATHEMATICS), TRANSCENDENTAL FUNCTIONS (U)
IDENTIFIERS: INTERNAL WAVES, SURFACE WAVES (U)

Waves in a rotating, stratified fluid of variable depth are considered. The perturbation pressure is used throughout as the dependent variable. This proves to have some advantages over the use of the vertical velocity. Some previous three-dimensional solutions for internal waves in a wedge are shown to be incorrect and the correct solutions presented. A WKB analysis is then performed for the general problem and the results compared with the exact solutions for a wedge. The WKB solution is also applied to long surface waves on a rotating ocean. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 759 610 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Northern Sources of Energy for the Deep Atlantic. (U)

DESCRIPTIVE NOTE: Technical rept., SEP 72 14P Wright,W. R. ;
REPT. NO. WHOI-73-24, WHOI-Contrib-2852
CONTRACT: N00014-66-C-0241
PROJ: NR-083 004

UNCLASSIFIED REPORT
Availability: Pub. in the Deep-Sea Research, v19 p865-877 1972.
SUPPLEMENTARY NOTE: Revision of report dated 14 Apr 72.

DESCRIPTORS: (*OCEAN CURRENTS, *POTENTIAL ENERGY), (*ATLANTIC OCEAN, OCEAN CURRENTS), HEAT TRANSFER, DEEP WATER, WIND, SOURCES, COOLING, HEATING, BUOYANCY, NORWEGIAN SEA, NAVAL RESEARCH (U)
IDENTIFIERS: LANDFORMS, WATER, LABRADOR SEA (U)

The vertical circulation in the ocean is believed to consist of a relatively rapid sinking of dense water in a few small regions at high latitudes and a relatively slow upward component elsewhere. As the water moves out laterally from the sinking regions to the rising regions it is modified by mixing with adjacent waters and by diffusion of heat and salt, so that the rising water is less dense than the sinking water. This means that in both the downward and upward movements, buoyancy work is done. For the purpose of this development we employ the concept of available potential energy, introduced by Lorenz (1955) in connection with atmospheric energetics. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 759 609 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Some Direct Observations of Currents in the Gulf Stream. (U)

DESCRIPTIVE NOTE: Technical rept., SEP 72 18P Parker,Charles E. ;
REPT. NO. WHOI-73-25, WHOI-Contrib-2845
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

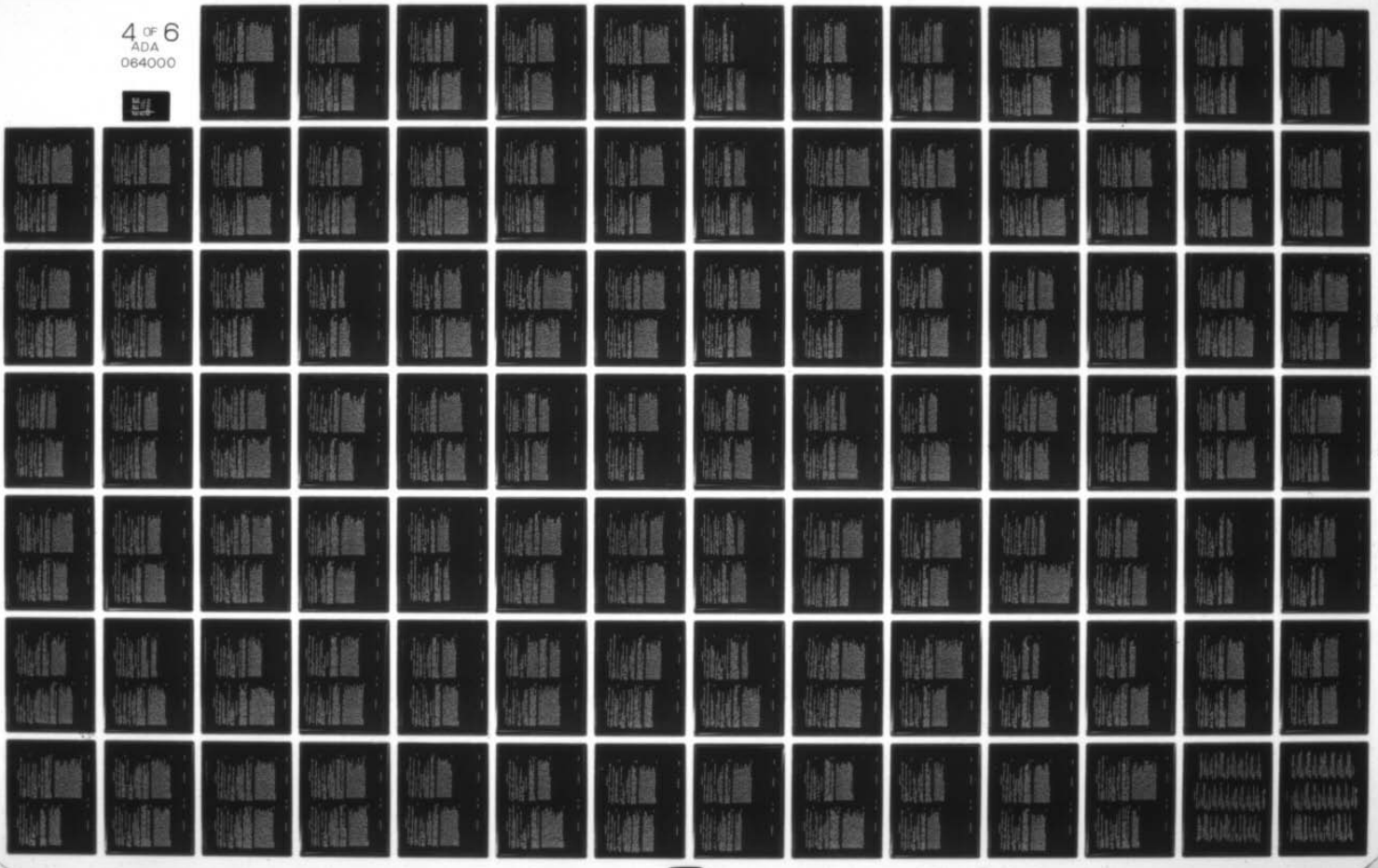
UNCLASSIFIED REPORT
Availability: Pub. in the Deep-Sea Research, v19 p879-893 1972.
SUPPLEMENTARY NOTE: Revision of report dated 7 Mar 72.

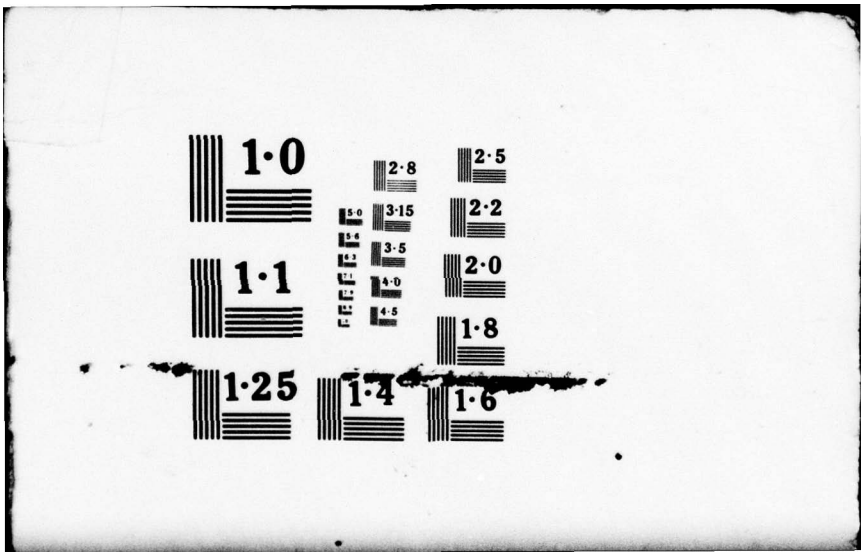
DESCRIPTORS: (*GULF STREAM, OCEAN CURRENTS), THERMOCLINES, THERMAL PROPERTIES, GEK DATA, DEEP WATER, HYDROGRAPHIC SURVEYING (U)

The paper presents a description of currents in the upper layers of the Gulf Stream in an area between 53 degrees W and 73 degrees W and their relationship to the thermal structure within the system. The experiments were done during 1968 and 1969 and demonstrated for the first time that it was possible to trace Gulf Stream currents with drogues for paths greater than 1000 kilometers and that these drogues would maintain their same relative position within the Stream as indicated by the temperature field. It is also shown that the swiftest currents are associated with the left-hand portion of the Stream near the location of the 15 degrees C is isotherm at a depth of 200 m and that, in the area studied, both the currents and the cross-stream thermal gradients were reduced by about 50% along the track from west to east. A description of the current and thermal conditions in two anticyclonic loops is also given. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 759 355 14/2
OFFICE OF NAVAL RESEARCH LONDON (ENGLAND)

The Heinz Steinitz Marine Biological Laboratory, The Hebrew University of Jerusalem, Eilat, Israel. (U)

MAR 73 11P Haderlie,E. C. ;
REPT. NO. ONRL-R-5-73

UNCLASSIFIED REPORT

DESCRIPTORS: (*LABORATORIES, *ISRAEL), (*OCEANOGRAPHY, SCIENTIFIC RESEARCH), MARINE BIOLOGY, RED SEA, UNIVERSITIES, TROPICAL REGIONS (U)

The report outlines the history and the physical facilities of the Station, its research and its instructional programs and its personnel. The climate, the bottom topography, and the hydrography - notably the high-salinity water - make the Gulf of Eilat, where the Station is located, a uniquely interesting place to study tropical oceanography and marine biology. Regrettably, financial report support for the Station is waning. Guest scientists are welcome, but the author would caution them that equipment may be in short supply. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 759 352 8/10 17/1 20/1
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

The Sound Velocity Structure of the North Indian Ocean. (U)

DESCRIPTIVE NOTE: Technical rept.,
DEC 72 104P Fenner,Don F. ;Bucca,Paul J. ;
REPT. NO. N00-TR-231
PROJ: N00-714-GT-HKE

UNCLASSIFIED REPORT

DESCRIPTORS: (*INDIAN OCEAN, *UNDERWATER SOUND), SOUND TRANSMISSION, DEEP WATER, SALINITY, TEMPERATURE, ANOMALIES, OCEAN CURRENTS, DEPTH FINDING, CORRELATION TECHNIQUES, RED SEA, VELOCITY, ANTISUBMARINE WARFARE (U)
IDENTIFIERS: MONSOONS, *ACOUSTIC VELOCITY (U)

All available sound velocity data in the North Indian Ocean (north of 10 degrees S latitude) were analyzed in terms of annual areal extent and depth of perturbations above deep axial depth, annual average depth and velocity of the deep sound channel and critical depth for the northeast and southwest monsoons. The vertical extent of these and other sound velocity features is shown on six north-south and six east-west cross-sections that extend to a maximum depth of 5000 meters. These analyses indicate that highly saline Red Sea Intermediate Water (RSIW) is the major factor controlling sound velocity structures in the North Indian Ocean. Mixing of RSIW with low salinity water masses causes either sporadic perturbations or an essentially isovelocity layer above deep axial depth. In relatively high concentrations, RSIW causes an anomalously deep (greater than 1700 meters) and narrow sound channel with velocities greater than 1493 meters/second (Gulf of Aden, Arabian Sea, and Arabian Basin. (Author) (U)

AD- 759 335 6/3 6/6
ARCTIC INST OF NORTH AMERICA WASHINGTON D C

Algal Populations in Arctic Sea Ice: An Investigation of Heterotrophy. (U)

DESCRIPTIVE NOTE: Technical rept.,
72 8P Horner,Rita ;Alexander,V. ;
REPT. NO. AINA-ONR-431:1
CONTRACT: N00014-70-A-0219-0001, NSF-GB-7800
PROJ: NR-307-105

UNCLASSIFIED REPORT
Availability: Pub. in Limnology and Oceanography, v17 n3 p454-458 May 72.
SUPPLEMENTARY NOTE: Prepared in cooperation with Alaska Univ., College. Inst. of Marine Science Rept. no. IMS-Contrib-160.

DESCRIPTORS: (*ALGAE, ARCTIC OCEAN), MARINE BIOLOGY, METABOLISM, NUTRITION (U)
IDENTIFIERS: AQUATIC PLANTS, BIOLOGICAL PRODUCTIVITY, HETEROTROPHY (U)

Complex algal populations in the bottom few centimeters of arctic sea ice are accompanied by bacteria, protozoans, and other organisms. Community uptake of dissolved organic substances, assayed with 14C-glycine, 14C-glucose, and 3H-acetate, was slow. Microscopic examination of autoradiographs suggests that heterotrophic metabolism by the algae was negligible and that assimilation of the added substrate was almost exclusively by bacteria. (Author) (U)

AD- 759 316 8/10
LOUISIANA STATE UNIV BATON ROUGE COASTAL STUDIES INST

Coral Reefs of St. Lucia, West Indies. (U)

DESCRIPTIVE NOTE: Technical rept.,
72 17P Roberts,Harry H. ;
REPT. NO. TR-134
CONTRACT: N00014-69-A-0211-0003
PROJ: NR-388-002

UNCLASSIFIED REPORT
Availability: Pub. in Caribbean Jnl. of Science, v12 n3/4 p179-190 Dec 72.

DESCRIPTORS: (*CORAL REEFS, *CARIBBEAN SEA), MORPHOLOGY(BIOLOGY), OCEAN BOTTOM, ALGAE, NAVAL RESEARCH, WEST INDIES (U)

Coral reefs growing in the waters of St. Lucia appear to be in an early stage of development. They consist of two general types: (1) patch and platform reefs and (2) incipient fringing reefs. St. Lucia is the only coral island in the Caribbean that exhibits patch and platform reef development on the windward side. Patch and platform reefs are constructed by a coral and algal consortium consisting primarily of Porites astreoides and Diploria clivosa and encrusting lithothamnid algae and Millepora. This reef structure exhibits an extreme bottom roughness and presents hazards to navigation. Fringing coral reefs, common on other Caribbean islands, are not well developed and are not easily subdivided into morphologic zones. Speculation as to the development of these reefal communities is advanced. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 759 315 8/7 8/10
RHODE ISLAND UNIV KINGSTON NARRAGANSETT MARINE LAB

Subbottom Basement Drainage System of Inner Continental Shelf off Southern New England, (U)

AUG 72 8P McMaster,Robert L. ; Ashraf,Asaf ;
REPT. NO. Ref-73-1
CONTRACT: N00014-68-A-0215-0003

UNCLASSIFIED REPORT
Availability: Pub. in Geological Society of America Bulletin, v84 p187-190 Jan 73.

DESCRIPTORS: (*OCEAN BOTTOM TOPOGRAPHY, CONTINENTAL SHELVES), (*STRUCTURAL GEOLOGY, CONTINENTAL SHELVES), (*CONTINENTAL SHELVES, DRAINAGE), STRUCTURAL GEOLOGY, EROSION, GLACIERS, COASTAL REGIONS (U)
IDENTIFIERS: REFLECTION PROFILING, GLACIATION (U)

Basement relief has been mapped by continuous seismic profiling beneath southern New England's inner shelf. A southward-trending, dendritic drainage pattern is well defined with the parts of the valleys landward of the coastal plain cuesta distinctly narrower and deeper than the segments underlying the coastal plain strata. Glaciation has deepened but has not rearranged the preglacial inner lowland or fall zone fluvial valleys. Ancient pre-Upper Cretaceous channels were reoccupied by preglacial streams where coastal plain deposits had been stripped away. The basement's lithologic and structural grain is probably north-south if the general drainage pattern is controlled by lithology and structure as implied by mainland relations. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 759 314 8/10
RHODE ISLAND UNIV KINGSTON NARRAGANSETT MARINE LAB

Sediments of the New England Continental Rise, (U)

APR 72 20P Zimmerman,Herman B. ;
REPT. NO. Ref-72-16
CONTRACT: N00014-68-A-0215-0003

UNCLASSIFIED REPORT
Availability: Pub. in Geological Society of America Bulletin, v83 p3709-3724 Dec 72.
SUPPLEMENTARY NOTE: Revision of report dated 10 Jan 72. Prepared in cooperation with Union Coll., Schenectady, N. Y.

DESCRIPTORS: (*OCEAN BOTTOM, SEDIMENTATION), (*SEDIMENTATION, *CONTINENTAL SHELVES), OCEAN BOTTOM SAMPLING, CLAY MINERALS, STRATIGRAPHY, MARINE GEOLOGY, MONTMORILLONITE, FORAMINIFERA, OCEAN CURRENTS (U)
IDENTIFIERS: SEDIMENT TRANSPORT, ILLITE (U)

The study evaluates 'contour current' model of sediment transport on the continental rise; examines the relationship between sediment, near-bottom circulation, and physiography of the continental rise; and evaluates the reliability of clay mineralogy as an indicator of deep current movement and stratigraphic changes in rise sediments deposited over the last glacial-post-glacial transition. (U)

AD- 759 305 8/3
CALIFORNIA UNIV SAN DIEGO LA JOLLA INST OF GEOPHYSICS AND PLANETARY PHYSICS

Kelvin Waves on Oceanic Boundaries, (U)

MAY 72 17P Miles,John W. ;
CONTRACT: N00014-69-A-0200-6005

UNCLASSIFIED REPORT
Availability: Pub. in the Jnl. of Fluid Mechanics, v55 pt1 p113-127 1972.

DESCRIPTORS: (*TIDES, EQUATIONS OF MOTION), (*OCEAN WAVES, COASTAL REGIONS), CONTINENTAL SHELVES, PACIFIC OCEAN, DIFFRACTION, WAVE PROPAGATION, CALIFORNIA (U)
IDENTIFIERS: *KELVIN WAVES (U)

The primitive Kelvin wave (on a rotating, semi-infinite, plane sheet of water of uniform depth bounded by a vertical wall) is corrected for the effects of the Earth's curvature, the reduction in depth over the continental shelf, and bends in the coastline. The results are of interest for coastal propagation of the tides; numerical examples are given for the California coastline. It is found that the Earth's curvature reduces the wave speed south of Cape Mendocino by 8-10% (the possible range for other coastlines is roughly plus or minus 15%) and that the continental shelf reduces the wave speed by 2-8%. The off-shore mass transport (which vanishes identically for the primitive Kelvin wave) induced by curvature and/or the shelf also is calculated. (Author Modified Abstract) (U)

AD- 759 297 8/10
NAVAL COASTAL SYSTEMS LAB PANAMA CITY FLA

Measurement and Correlation of Acoustic Reflection and Sediment Properties Off Panama City, Florida. (U)

DESCRIPTIVE NOTE: Informal rept.,
JUN 72 33P McLeroy,E. G. ;
REPT. NO. NCSL-112-72
PROJ: SR011-01, ZR00-312
TASK: SR011-01-01, ZR00-312-001

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Reprinted Apr 73. Supersedes AD-901 662.

DESCRIPTORS: (*OCEAN BOTTOM, ACOUSTIC PROPERTIES), POROSITY, GRAIN SIZE, DENSITY, MEXICO GULF, OCEAN BOTTOM SAMPLING, ECHO RANGING, ATLANTIC OCEAN (U)
IDENTIFIERS: *REFLECTION PROFILING, SEDIMENTS (U)

Continuous fathometer echo measurements were made along a 1200-mile track in the Gulf of Mexico off Panama City, Florida. Bottom samples were taken at 160 locations in the 3500 square mile test area. The amplitude and length of the echoes at the 160 locations were compared with results of the laboratory measurements of various sediment parameters. The echo parameters are readily correlatable with sediment water content, porosity, and the fraction of silt- and clay-sized particles. The length of the echo is suggested as a good indicator of the grain size fraction. (Author) (U)

AD- 759 147 8/1
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

The Upper Sublittoral Zone of the Western Murmansk Region near Aynovy Islands (Results of Scuba Underwater Work) (Verkhnyaya Sublitoral Zapadnogo Murmana u Ainovykh Ostrovov (Rezultaty Podvodnykh Rabot s Primeneniem Akvalangov)), (U)

73 9P Propp,M. V. ;
REPT. NO. NOO-Trans-550

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. of Akademiya Nauk SSSR. Murmanskii Morskoi Biologicheskii Institut. Trudy, v5(9) p57-60 1964.

DESCRIPTORS: (*OCEAN BOTTOM, *BIOASSAY), (*ARCTIC OCEAN ISLANDS, *ECOLOGY), OCEAN BOTTOM SAMPLING, ALGAE, AQUATIC ANIMALS, MARINE BIOLOGY, USSR (U)
IDENTIFIERS: BENTHOS, BENTHONIC ZONE, BIOMASS, TRANSLATIONS (U)

The study was undertaken by aqualung divers to determine the reserves of commercially utilized seaweeds. Distribution of fauna and flora of the Aynovy Islands area of the western Murmansk region was investigated to a depth of 50 meters. Comparative estimates of the population density (amount of biomass per square meter) are given. Many warm-water species, not usually encountered in these latitudes, were found in this area. This region Murmansk region in a short summary. (Author) (U)

AD- 759 078 8/10 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF ADVANCED OCEAN ENGINEERING LAB

Advanced Ocean Engineering Laboratory Technical Progress Report. (U)

DESCRIPTIVE NOTE: Rept. for 1 Jul-31 Dec 72,
MAR 73 61P Spiess,Fred N. ;Stewart, Robert H. ;Inman,Douglas L. ;Van Dorn, William G. ;
REPT. NO. AOEL-38, SIO-Ref-73-11
CONTRACT: N00014-69-A-0200-6012, ARPA Order-1348

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Sponsored in part by ARPA Order-1730 and ARPA Order-1607.

DESCRIPTORS: (*FLOATING BODIES, STABILIZED PLATFORMS), (*OCEAN BOTTOM, TRANSPORT PROPERTIES), (*OCEAN WAVES, SURFACE ROUGHNESS), BUOYS, TELEMETER SYSTEMS, RADIO WAVES, BACKSCATTERING, RADAR REFLECTIONS, SEDIMENTATION, DIRECTION FINDING (U)
IDENTIFIERS: SEDIMENT TRANSPORT, ELECTROMAGNETIC SCATTERING (U)

The semi-annual report reflects the technical status of projects conducted within the Advanced Ocean Engineering Laboratory at the Scripps Institution of Oceanography. These projects are: (1) Stable Floating Platform.- to conceive, design, build and demonstrate the feasibility of large stable floating platforms in the open sea. (2) Electromagnetic Roughness of the Ocean Surface - use of radio signals scattered from the sea surface to determine the directional spectrum of ocean waves. (3) Advanced Studies in Nearshore Engineering - field studies of the water-sediment interface under wave action in and near the breaker zone/and laboratory investigation of the velocity field of breaking waves. (4) Wave Breaking In Deep Water - a projected two-year laboratory and field investigation of the factors controlling the breaking of mixed-frequency wave systems in deep water. (Author) (U)

AD- 759 041 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Synoptic View of the Caribbean Sea Surface Topography. (U)

DESCRIPTIVE NOTE: Technical rept., AUG 72 14P Dean,J. P. ;McCullough, C. B. ;
REPT. NO. WHOI-72-64
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT

DESCRIPTORS: (*CARIBBEAN SEA, MAPPING), HEIGHT FINDING, CORRELATION TECHNIQUES, BAROMETRIC PRESSURE, HYDROSTATIC PRESSURE, WIND, OCEAN CURRENTS, TIDES (U)
IDENTIFIERS: OCEAN SURFACE, SATELLITE ALTIMETRY, SEA STATES, GRAVIMETRIC GEODESY (U)

Theoretical estimates of some factors which affect the topography of the sea surface are given for the Caribbean Sea. Weather and oceanographic effects which act on the ocean surface eventually to be mapped by an orbiting GEOS-C satellite are discussed in terms of their relative magnitudes and general distribution over the area of interest. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 759 001 8/1 6/3
OFFICE OF NAVAL RESEARCH LONDON (ENGLAND)

Marine Biology and Oceanography in Greece, (U)

MAR 73 10P Haderlie,E. C. ;
REPT. NO. ONRL-R-9-73

UNCLASSIFIED REPORT

DESCRIPTORS: (*MARINE BIOLOGY, SCIENTIFIC RESEARCH), (*OCEANOGRAPHY, *GREECE), LABORATORIES, OCEANOGRAPHIC SHIPS, FISHES, SCIENTISTS, GREAT BRITAIN (U)
IDENTIFIERS: FISHERIES (U)

The current state of marine biology and oceanography in Greece is discussed. (Author) (U)

AD- 758 736 8/10 8/3
SACLANT ASW RESEARCH CENTRE LA SPEZIA (ITALY)

Oceanography of the Norwegian and Greenland Seas and Adjacent Areas. Volume 1: Bibliography. (U)

DESCRIPTIVE NOTE: Memorandum rept., FEB 73 182P Trangeled,Svend ;
REPT. NO. SACLANTCEN-SM-4

UNCLASSIFIED REPORT

DESCRIPTORS: (*GREENLAND SEA, OCEANOGRAPHY), (*NORWEGIAN SEA, OCEANOGRAPHY), (*OCEANOGRAPHY, *BIBLIOGRAPHIES), MARINE BIOLOGY, OCEAN BOTTOM TOPOGRAPHY, MARINE GEOPHYSICS, MARINE GEOLOGY, GEOMAGNETISM, OCEAN CURRENTS, SEA ICE, CLIMATE (U)
IDENTIFIERS: *BARENTS SEA, *DENMARK STRAIT (U)

The report is part of a series describing the results of a survey of the scientific literature relevant to the physical oceanography, including marine geology, of the Norwegian and Greenland Seas and adjacent areas. The area, is essentially the marine area between latitudes 60 degrees and 80 degrees N, limited to the west by the east coast of Greenland and to the east by the west and north coasts of Norway, the Kola Peninsula and the west coast of Novaya Zemlya. In the north it adjoins the North Polar Sea and in the south the North Sea and the North Atlantic Ocean. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 758 678 8/10
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Measurement of the Complex Dynamic Rigidity of Recent Marine Sediments. (U)

DESCRIPTIVE NOTE: Master's thesis, DEC 72 81P Engel,Gregory Allen ;

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN BOTTOM, VISCOELASTICITY), OCEAN BOTTOM SAMPLING, ACOUSTIC PROPERTIES, SEDIMENTATION, TEMPERATURE, DENSITY, POROSITY, SAND, SILT, CLAY, SAMPLERS, SAMPLING, SHEAR STRESSES, THESES, COMPUTER PROGRAMS (U)
IDENTIFIERS: SEDIMENTS, SHEAR MODULUS, DYNAMICS (U)

The report tests and develops a viscoelastometer, possible suitable for in situ measurement, and applies it to the measurement of dynamic rigidity of real ocean sediments. The following sections describe the theory of measurement, the equipment and procedures, sample collection and preparation, the limitations of the method, and results of the various rigidity determinations. A discussion of results and recommendations for future research are then presented. (U)

AD- 758 659 8/10
TEXAS UNIV AUSTIN APPLIED RESEARCH LABS

In situ Measurement of Sediment Sound Speed During Coring. (U)

DESCRIPTIVE NOTE: Final rept. 15 Apr 71-14 Mar 73, MAR 73 86P Shirley,Donald J. ;Anderson, Aubrey L. ;Hampton,Loyd D. ;
REPT. NO. ARL-TR-73-1
CONTRACT: N00014-70-A-0166-0005
PROJ: NR-291-050

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN BOTTOM, ACOUSTIC PROPERTIES), (*OCEAN BOTTOM SAMPLING, *ACOUSTIC EQUIPMENT), ELECTROACOUSTIC TRANSDUCERS, SOUND TRANSMISSION, MARINE GEOLOGY, ATTENUATION, ACCURACY, MEXICO GULF (U)
IDENTIFIERS: LITHOLOGY, ACOUSTIC VELOCITY, RECORDING, SEDIMENTOLOGY, *SEDIMENTS, SEDIMENTARY PETROLOGY, *CORING (U)

A system was developed for attachment to sediment corers to obtain an in situ sound speed profile during a coring operation. The system uses two electroacoustic transducers mounted in the cutting head of the corer and associated electronic circuitry to measure the travel time of an acoustic pulse traversing the diameter of the sediment core. Laboratory and field tests which demonstrate the capabilities of the measurement technique are reported. Sound speed profiles were obtained in the Gulf of Mexico using a piston corer and in coastal waters using a special shallow water coring rig. Limited examination of the feasibility of measuring acoustic attenuation and volume scattering is also reported. (Author Modified Abstract) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 758 598 8/7
LOUISIANA STATE UNIV BATON ROUGE COASTAL STUDIES INST

X-Ray Radiography of Recent Carbonate Sediments. (U)

DESCRIPTIVE NOTE: Technical rept., MAR 72 7P Roberts,Harry H. ;
REPT. NO. TR-138
CONTRACT: N00014-69-A-0211-0003
PROJ: NR-388-002

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Sedimentary Petrology, v42 n3 p690-693 Sep 72.

DESCRIPTORS: (*OCEAN BOTTOM SAMPLING, MICROSTRUCTURE), (*X RAY PHOTOGRAPHY, *SEDIMENTARY ROCK), (*CLAY, *PETROLOGY), (*GRAVEL, PETROLOGY), CARBONATE MINERALS, MUD, STRUCTURAL GEOLOGY (U)
IDENTIFIERS: CENOZOIC ERA, SEDIMENTARY PETROLOGY (U)

Exposure charts are presented which eliminate the need for trial-and-error methods before radiographs of high resolution are attained. This technique greatly enhances the study of sedimentary structures in carbonate sediments, the estimation of constituent particle proportions in gravel-sized carbonates, and the investigation of borings into calcium carbonate substrates. (Author) (U)

AD- 758 597 8/6 8/3
LOUISIANA STATE UNIV BATON ROUGE COASTAL STUDIES INST

Comment on Paper by A. J. Bowen and D. L. Inman, 'Edge Wave and Crescentic Bars'. (U)

DESCRIPTIVE NOTE: Technical rept.,
MAR 72 6P Sonu,Choule J. ;
REPT. NO. TR-136
CONTRACT: N00014-69-A-0211-0003
PROJ: NR-388-002

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v77 n33 p6629-6631, 20 Nov 72.

DESCRIPTORS: (*COASTAL REGIONS, TERRAIN), (*OCEAN WAVES, BEACHES), TIDES, INTERACTIONS, SAND, DRIFT (U)
IDENTIFIERS: *COASTAL TOPOGRAPHIC FEATURES (U)

Crescentic bars and cuspate shore lines are common features of many of the world's sea and ocean coasts. This type of morphology causes repetitive longshore variations in littoral currents, offshore slope, and beach trafficability properties. The mechanisms responsible for formation of this topography are not completely understood, and this note evaluates the feasibility of pursuing theoretical and experimental approaches to explaining crescentic bars by a standing-edge wave trapped between headlands, as postulated by Bowen and Inman (1971). The conclusion is that the wide variations in both form and size of crescentic bars require considerations of mechanisms other than those based on edge-wave theory. (Author) (U)

AD- 758 596 8/8 8/6
LOUISIANA STATE UNIV BATON ROUGE COASTAL STUDIES INST

Emerged Tidal Flats in the Ord River Estuary, Western Australia. (U)

DESCRIPTIVE NOTE: Technical rept.,
JUL 72 6P Wright,Lynn D. ;Coleman, James M. ;Thom,Bruce G. ;
REPT. NO. TR-135
CONTRACT: N00014-69-A-0211-0003
PROJ: NR-388-002

UNCLASSIFIED REPORT
Availability: Pub. in Search, v3 n9 p339-341 Sep 72.
SUPPLEMENTARY NOTE: Prepared in cooperation with Australian National Univ., Canberra. Dept. of Biography and Geomorphology.

DESCRIPTORS: (*ESTUARIES, TIDES), (*TIDES, DEPOSITS), MUD, SWAMPS, TERRAIN, SAND, CLAY, AUSTRALIA (U)
IDENTIFIERS: SEA LEVEL, GEOMORPHOLOGY, TIDAL FLATS (U)

Emerged tidal flats and stranded beaches have been cited as evidence for determining higher stands of sea level during the Holocene. Recent investigations in the Ord River estuary, Western Australia, have shown that these relict tidal flats result from a normal sequence of process modifications which accompany deltaic progradation. Tidal regime in the estuary was continuously modified as the Ord River began to fill the upper end. Tidal amplitude and wavelength are therefore lower today than during the period when the estuary was a deep embayment. Thus, tidal flats in the upper reaches are perched above present-day tidal inundation. The study indicated the importance of estuary shape and depositional patterns in controlling tidal processes in high-tide estuaries. In many instances tidal characteristics in the estuary differ considerably from those near the estuary mouth. (Author) (U)

AD- 758 393 8/10 8/3
OFFICE OF NAVAL RESEARCH ARLINGTON VA

Ocean Science and Technology Division Report Availability Notice - Fall 1972. (U)

72 246P
REPT. NO. ONR-ACR-188

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: ONR Ocean Science Program reports.

DESCRIPTORS: (*OCEANOGRAPHY, SCIENTIFIC RESEARCH), ABSTRACTS, MARINE BIOLOGY, MARINE GEOLOGY, MARINE GEOPHYSICS, MARINE METEOROLOGY, OCEAN CURRENTS, OCEAN WAVES, OCEAN BOTTOM SAMPLING, GEOMAGNETISM, SEA WATER, BUOYS (U)
IDENTIFIERS: AIR WATER INTERACTIONS (U)

The primary objective of Office of Naval Research support of oceanographic investigations is to gain the understanding of the ocean environment required by the Navy to most effectively perform its mission of national defense. ONR-supported oceanography not only contributes to the national defense but inevitably makes significant contributions to the general oceanographic knowledge and to the attainment of national marine science program goals. The document contains abstracts of individual research projects on the ONR Ocean Science Program. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 758 379 8/7
WISCONSIN UNIV MADISON DEPT OF GEOLOGY

The Origin and Stratigraphic Significance of Pink Layers in Late Cenozoic Sediments of the Arctic Ocean. (U)

DESCRIPTIVE NOTE: Technical rept.,
72 82P Hoffman,Thomas Frank ;
REPT. NO. Clark-11
CONTRACT: N00014-67-A-0128-0002
PROJ: NR-307-311

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Master's thesis.

DESCRIPTORS: (*ARCTIC OCEAN, *STRATIGRAPHY), (*OCEAN BOTTOM SAMPLING, SEDIMENTARY ROCK), COLORS, CHEMICAL ANALYSIS, IRON OXIDES, X RAY DIFFRACTION, THESES (U)
IDENTIFIERS: MINERALOGY, CORES, Cenozoic Era (U)

The study investigates the nature of particular color intervals in deep sea sediment cores from the Arctic Ocean Basin to determine their origin and usefulness in stratigraphic correlation. Peculiar to many of these cores is a thin interval of salmon pink colored sandy lutite about 1-2 centimeters thick. The study obtains detailed information about these pink intervals, including textural, compositional, and stratigraphic relationships. (U)

AD- 758 377 8/7
WISCONSIN UNIV MADISON DEPT OF GEOLOGY

Pleistocene and Recent Foraminifera from the Chukchi Rise and Canada Basin Areas of the Arctic Ocean. (U)

DESCRIPTIVE NOTE: Technical rept.,
71 102P Fagerlin,Stanley Charles ;
REPT. NO. Clark-10
CONTRACT: N00014-67-A-0128-0002
PROJ: NR-307-311

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Master's thesis.

DESCRIPTORS: (*ARCTIC OCEAN, *PALEONTOLOGY), (*FORAMINIFERA, ARCTIC OCEAN), OCEAN BOTTOM SAMPLING, MICROPALEONTOLOGY, PLANKTON, STRATIGRAPHY, THESES (U)
IDENTIFIERS: BENTHOS, CENEZOIC ERA, FLETCHER ICE ISLAND, INDICATOR SPECIES, CORES (U)

Two cores of Arctic Ocean sediments were studied to determine their faunal content. Emphasis was placed on the benthonic Foraminifera and their usefulness in paleoecologic considerations. Relative abundances were determined and species were identified. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 758 376 8/7
WISCONSIN UNIV MADISON DEPT OF GEOLOGY

'Globigerina pachyderma' and 'Globigerina quinqueloba' in Late Cenozoic Sediment of the Arctic Ocean. (U)

DESCRIPTIVE NOTE: Master's thesis,
72 93P Root,Ruth Eva ;
REPT. NO. Clark-9
CONTRACT: N00014-67-A-0128-0002
PROJ: NR-307-311

UNCLASSIFIED REPORT

DESCRIPTORS: (*ARCTIC OCEAN, *STRATIGRAPHY), (*PALEONTOLOGY, ARCTIC OCEAN), MICROPALEONTOLOGY, FORAMINIFERA, OCEAN BOTTOM SAMPLING, PLANKTON, CORRELATION TECHNIQUES, THESES (U)
IDENTIFIERS: PALEOMAGNETISM, CENEZOIC ERA, GLOBIGERINA PACHYDERMA, CORES (U)

A study of Arctic Ocean sediment cores was undertaken to define the occurrence and relationship of two planktonic Foraminifera, Globigerina pachyderma and Globigerina quinqueloba. The two species were compared morphologically and their abundance peaks were correlated with magnetic stratigraphy as well as with abundance peaks of benthonic Foraminifera. Finally their distribution in the modern oceans was examined as an aid in determining possible changes in the Arctic Ocean of the Late Cenozoic. (U)

AD- 758 208 8/3
MASSACHUSETTS INST OF TECH LEXINGTON LINCOLN LAB

Validated-Data Report for the Tower Phase of the ARPA/OWEX Program. (U)

DESCRIPTIVE NOTE: Final rept.,
NOV 72 74P Guthart,H. ;
CONTRACT: F19628-70-C-0230, ARPA Order-600
PROJ: SRI-2106
MONITOR: ESD TR-73-76

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with Stanford Research Inst., Menlo Park, Calif.

DESCRIPTORS: (*OCEAN WAVES, HEIGHT FINDING), POWER SPECTRA, RADIOMETERS, DIRECTION FINDING, ATTENUATION (U)

Instrumentation has been designed, developed, and operated to measure the statistics of wave-height fluctuations as well as the spatial-attenuation factor of capillary waves. A microwave radiometer was provided to measure the thermal emissions of the ocean surface at 8.9 GHz. This report highlights some of the data collected during the latter part of August 1972 on the NUC oceanographic tower. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 758 100 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Distribution of Ferromanganese Deposits in the World Ocean. (U)

DESCRIPTIVE NOTE: Journal article,
MAR 73 11P Horn,D. R. ;Horn,B. M. ;
Delach,M. N. ;
REPT. NO. LDGO-1867
CONTRACT: N00014-67-A-0108-0004
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in the International Decade of Ocean Exploration Conference Proceedings, p9-17 Jan 72.

DESCRIPTORS: (*OCEAN BOTTOM, *MANGANESE), (*IRON COMPOUNDS, OCEAN BOTTOM), (*MINERALS, DISTRIBUTION), DEPOSITS, HYDROGRAPHIC SURVEYING, SEDIMENTATION, CLAY MINERALS, RADIOLARIA, MARINE GEOLOGY, ATLANTIC OCEAN, PACIFIC OCEAN, INDIAN OCEAN, FLORIDA, SOUTH AMERICA (U)

A survey of reported occurrences of ferromanganese deposits on the ocean floor reveals major provinces of nodular and encrusting deposits. In the Atlantic and western Indian Oceans they include the Blake Plateau and Red Clay Province off Florida; South American Province in the South Atlantic; Cape Basin and Agulhas Plateau off the tip of South Africa; and Madagascar and Crozet Basins of the Indian Ocean. The most widespread ferromanganese deposits lie in the North Pacific where they are associated with red clay and radiolarian sediment. Less data are available from the South Pacific, but suggest the Manihiki and Tuamotu Plateaus; and the Line, Cook and Society Islands are rich in ferromanganese. (Author) (U)

AD- 758 032 8/3
NAVAL INTELLIGENCE SUPPORT CENTER WASHINGTON D C TRANSLATION DIV

Some Basic Problems of Modern Oceanography (Nekotorye Osnovnye Problemy Sovremennoi Okeanografii), (U)

FEB 73 22P Maksimov,I. V. ;Sarukhanyan, E. I. ;Smirnov,N. P. ;
REPT. NO. NISC-Trans-3413

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. of Problemy Arktiki i Antarktiki (USSR). Sbornik Statei, n32 p5-18 1969.

DESCRIPTORS: (*OCEANOGRAPHY, SCIENTIFIC RESEARCH), OCEAN CURRENTS, TIDES, MOON, SUN, POLAR REGIONS, USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

The tide-generating forces of the moon and the sun which act on the earth, besides semidiurnal and diurnal components, contain a sizeable and quite complex, long-period component. The author briefly studies the long-period tides in the ocean and their possible influence both on the transfer of heat by the ocean waters and on the climate of the earth. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 758 008 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Monthly Mean Bathythermograph Data from Ocean Weather Station 'PAPA', (U)

MAR 73 106P Ballis,Douglas J. ;
REPT. NO. SIO-Ref-73-5
CONTRACT: N00014-69-A-0200-6006, N00014-69-A-0200-6043
MONITOR: NSF/IDOE 73-16

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Report on North Pacific Experiment. See also report dated 15 Mar 73, AD-757 998.

DESCRIPTORS: (*BATHYTHERMOGRAPH DATA, *PACIFIC OCEAN), SEA WATER, SURFACE TEMPERATURE, THERMOCLINES, DEPTH FINDING, ANOMALIES, PERIODIC VARIATIONS, WEATHER STATIONS, NAVAL RESEARCH (U)
IDENTIFIERS: ISOTHERMS, GRADIENTS, TEMPERATURE (U)

The report presents the monthly mean vertical distributions of sea temperature at Ocean Weather Station 'PAPA' as computed from 19 years (1950 - 1968) of routine bathythermograph observations. Graphs are presented showing mean vertical temperature profile for individual months superimposed upon the long-term mean profile for the month. In addition, graphs of the individual monthly mean depths of isotherms, subsurface temperature anomalies, and subsurface temperature gradiants are displayed. Also included are the digitized values of the individual monthly mean sea temperatures and their standard deviations at five meter intervals from the surface down to the depth of the deepest cast for the month. A listing of the daily distribution of BT observations for each month is shown. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 757 999 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Monthly Mean Bathythermograph Data from Ocean Weather Station 'NOVEMBER', (U)

MAR 73 126P Ballis,Douglas J. ;
REPT. NO. SIO-Ref-73-7
CONTRACT: N00014-69-A-0200-6006, N00014-69-A-0200-6043
MONITOR: NSF/IDOE 73-18

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Report on North Pacific Experiment. See also report dated 15 Mar 73, AD-757 998.

DESCRIPTORS: (*BATHYTHERMOGRAPH DATA, *PACIFIC OCEAN), SEA WATER, SURFACE TEMPERATURE, THERMOCLINES, DEPTH FINDING, ANOMALIES, PERIODIC VARIATIONS, WEATHER STATIONS, NAVAL RESEARCH (U)
IDENTIFIERS: ISOTHERMS, GRADIENTS, TEMPERATURE (U)

The report presents the monthly mean vertical distributions of sea temperature at Ocean Weather Station 'November' as computed from twenty four years (1947-1970) of routine bathythermograph observations. Graphs are presented showing mean vertical temperature profile for individual months superimposed upon the long-term mean profile for the month. In addition, graphs of the individual monthly mean depths of isotherms, subsurface temperature anomalies, and subsurface temperature gradients are displayed. Also included are the digitized values of the individual monthly mean sea temperatures and their standard deviations at five meter intervals from the surface down to the depth of the deepest cast for the month. A listing of the daily distribution of BT observations for each month is shown. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 757 998 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Monthly Mean Bathythermograph Data from Ocean Weather Station 'VICTOR', (U)

MAR 73 87P Ballis,Douglas J. ;
REPT. NO. SIO-Ref-73-6
CONTRACT: N00014-69-A-0200-6006, N00014-69-A-0200-6043
MONITOR: NSF/IDOE 73-17

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Report on North Pacific Experiment. See also report dated 15 Mar 73, AD-757 999.

DESCRIPTORS: (*BATHYTHERMOGRAPH DATA, *PACIFIC OCEAN), SEA WATER, SURFACE TEMPERATURE, THERMOCLINES, DEPTH FINDING, ANOMALIES, PERIODIC VARIATIONS, WEATHER STATIONS, NAVAL RESEARCH (U)
IDENTIFIERS: ISOTHERMS, GRADIENTS, TEMPERATURE, VICTOR OCEAN WEATHER STATION (U)

The report presents the monthly mean vertical distributions of sea temperature at Ocean Weather Station 'Victor' as computed from 16 years (1955 - 1970) of routine bathythermograph observations. Graphs are presented showing mean vertical temperature profile for individual months superimposed upon the long-term mean profile for the month. In addition, graphs of the individual monthly mean depths of isotherms, subsurface temperature anomalies, and subsurface temperature gradients are displayed. Also included are the digitized values of the individual monthly mean sea temperatures and their standard deviations at five meter intervals from the surface down to the depth of the deepest cast for the month. A listing of the daily distribution of BT observations for each month is shown. (Author) (U)

AD- 757 982 4/2 8/3
GENERAL DYNAMICS SAN DIEGO CALIF ELECTRONICS DIV

Processed Wind and Wave Measurements from Ocean Weather Station PAPA. (U)

DESCRIPTIVE NOTE: Technical rept. Oct 72-Mar73,
MAR 73 35P Rutledge,C. K. ;
REPT. NO. R73-010
CONTRACT: N00014-70-C-0180
PROJ: NR-083-147

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Report on North Pacific Experiment (NORPAX).

DESCRIPTORS: (*WIND, MARINE METEOROLOGY), (*OCEAN WAVES, PACIFIC OCEAN), STATISTICAL ANALYSIS, PERIODIC VARIATIONS, DATA PROCESSING (U)
IDENTIFIERS: WIND VELOCITY, NORTH PACIFIC OCEAN, AIR WATER INTERACTIONS, SEASONAL VARIATIONS, HISTOGRAMS (U)

As part of an investigation into the environmental conditions existing in the North Pacific Ocean, observational data collected from ships occupying Ocean Weather Station PAPA were obtained from the Canadian Atmospheric Environment Service. Wind and wave data for the fall and winter months over the period 1951 through 1971 were processed. Wind speed and wave height were examined using a computer program to construct histograms displaying data distributioon a monthly basis. Data were divided into two intervals (1951 through 1961, and 1962 through 1971) to compare the two periods since their is a general belief that wind/wave severity has diminished during the past 20 years. The histograms included in the report show that maximum wind speed data and the mean wave height data as reported indicate a definite lessening in environmental severity at the location. Mean wind speed data show a similar trend, but of a much smaller extent. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 757 975 8/3 13/2
ARMY COASTAL ENGINEERING RESEARCH CENTER WASHINGTON D C

Maximum Breaker Height, (U)

JUN 72 23P Weggel,J. Richard ;
REPT. NO. CERC-Reprint-3-73

UNCLASSIFIED REPORT

Availability: Pub. in Jnl. of the Waterways, Harbors and Coastal Engineering Division, Proceedings of the American Society of Civil Engineers, v98 nWW4 p529-548 Nov 72. (Paper 9384).

DESCRIPTORS: (*OCEAN WAVES, HEIGHT FINDING), (*BREAKWATERS, OCEAN WAVES), ALTITUDE, DEEP WATER, BEACHES, EXPERIMENTAL DATA, TABLES(DATA) (U)
IDENTIFIERS: COASTAL ENGINEERING, HEIGHT (U)

A reevaluation of available experimental data on breaking waves shows a relationship between the breaker height-breaking depth ratio, the incident wave steepness and the beach slope. This relationship, when combined with experimental observations of breaker travel, permits an estimate of the maximum breaking wave height a coastal structure might experience given a design wave period and design depth at the structure site. Breaker-type classification according to inshore and offshore parameters as presently defined cannot be reconciled to observations of the relationship between breaker-height index, wave steepness and beach slope. Revised criteria for breaker classification are presented. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 757 948 8/10 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Crustal Deformation in the Wharton Basin, (U)

OCT 72 7P Carpenter,G. ;Ewing,J. ;
REPT. NO. LDGO-1913
CONTRACT: N00014-67-A-0108-0004
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v76 n5 p846-850, 10 Feb 73.
SUPPLEMENTARY NOTE: Revision of report dated 25 Jul 72.

DESCRIPTORS: (*MARINE GEOLOGY, *INDIAN OCEAN), SEDIMENTATION, ECHO RANGING, DEPTH FINDING, OCEAN BOTTOM TOPOGRAPHY, REFLECTION, THICKNESS, DEFORMATION, LITHOSPHERE (U)
IDENTIFIERS: *OCEAN BOTTOM SPREADING, BATHYMETRY, SEISMIC REFLECTION METHOD, EARTH CRUST (U)

A group of short, linear structural depressions occurs in the Wharton basin in the northeast Indian Ocean. Depth to acoustic basement exceeds 7500 meters in at least one of the deeps. Bathymetric and seismic data indicate that the deeps may be grabens produced by crustal extension and thinning. Another possibility is that they may be fracture zones associated with an extinct (and ill-defined) spreading center that have been disoriented by crustal motions subsequent to their emplacement. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 757 947 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Tectonic Lineaments on the Cocos Plate, (U)

NOV 72 9P Truchan,Marek ;Larson,Roger L. ;
REPT. NO. LDGO-1863
CONTRACT: N00014-67-A-0108-0004
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Earth and Planetary Science Letters, v17 p426-432 1973.
SUPPLEMENTARY NOTE: Revision of report dated 19 Sep 72.

DESCRIPTORS: (*MARINE GEOLOGY, *PACIFIC OCEAN), ECHO RANGING, SEDIMENTATION, LITHOSPHERE, OCEAN BOTTOM TOPOGRAPHY, STRUCTURAL GEOLOGY, FAULTS(GEOLOGY), MAPPING, DEPTH FINDING (U)
IDENTIFIERS: *PLATE TECTONICS (U)

Mapping of the Siqueiros Fracture Zone shows that it extends at least 850 km east of the crest of the East Pacific Ridge with an overall azimuth of 082 degrees. The bearing of its younger portion is 084 degrees. The relatively constant trend of the fracture zone indicates a constant direction of motion at that plate boundary location for the past 20 million year. However, comparison of the observed trend of the fracture zone with a synthetic trend generated from the Cocos-Pacific pole of rotation at 40 degrees W shows that the pole has remained in this location for only the past 5-7 million year. Prior to that time, the pole must have been close to the Pacific-Farallon pole of rotation at 78 degrees N, 136 degrees W. (Author Modified Abstract) (U)

AD- 757 946 8/10 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

The Macquarie Ridge Complex, (U)

72 8P Hayes,Dennis E. ;Talwani, Manik ;Christoffel,D. A. ;
REPT. NO. LDGO-1649
CONTRACT: N00014-67-A-0108-0004
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in International Union of Geological Sciences, Ser-B, n1 p767-771 1972.
SUPPLEMENTARY NOTE: Prepared in cooperation with Victoria Univ., Wellington (New Zealand).

DESCRIPTORS: (*MARINE GEOLOGY, *PACIFIC OCEAN), OCEAN BOTTOM TOPOGRAPHY, SEDIMENTATION, REFLECTION, MAGNETIC ANOMALY DETECTION, GRAVITY, ANOMALIES, ANTARCTIC REGIONS (U)
IDENTIFIERS: MACQUARIE RIDGE, OCEAN BOTTOM SPREADING, PLATE TECTONICS, SEISMIC PROFILES, GEOMORPHOLOGY (U)

The north-east-south-west trending Macquarie Ridge-Trench complex and its intersection with the Indian-Pacific-Antarctic Ridge provides a unique morphological connection between New Zealand and Antarctica. The seismically active Macquarie complex has been postulated as being a mid-oceanic ridge, an island-arc trench system and a shear zone (transform fault). The morphology of the ridge has been more clearly defined by recent soundings made from Eltanin, and it is more complicated than previously known. Trench-like depressions of the sea floor lie both east and west of the Macquarie Ridge and parallel to it. These depressions appear to be connected by deep narrow transverse passages through the ridge. Magnetic anomalies show no tendency to markedly reduced amplitudes near the Hjort Trench axis as is generally observed elsewhere over island-arc trenches. (Author Modified Abstract) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0MO7

AD- 757 852 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Recent Decadal Variation in the California Current System, (U)

MAY 72 12P Huang,Joseph Chi Kan ;
CONTRACT: N00014-69-A-0200-6006

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Physical Oceanography, v2/n4 p382-390 Oct 72.
SUPPLEMENTARY NOTE: Presented at the Conference on the Interaction of the Sea and the Atmosphere Held in Ft. Lauderdale, Fla., 1-3 Dec 71. Report on North Pacific Experiment (NORPAX). Revision of report dated 8 Mar 72.

DESCRIPTORS: (*OCEAN CURRENTS, ANOMALIES), (*PACIFIC OCEAN, SURFACE TEMPERATURE), PERIODIC VARIATIONS, MARINE METEOROLOGY, INTERACTIONS, SALINITY (U)
IDENTIFIERS: *AIR WATER INTERACTIONS, CALIFORNIA CURRENT (U)

A study has been made to identify the existence of different decadal climatic regimes before and after the anomalous environmental changes that occurred in 1958. Atmospheric and oceanographic data in the California Current System near San Diego were processed and used for the computation of all oceanic mass transport components. Evidence shows that distinguishable climatic regimes did exist and that the period of 1957-58 abrupt anomalous variations marked the break between two successive quasi-stable decadal regimes. Differences in temperature and salinity and differences in current flow account for the significant difference in San Diego sea level variations between the periods 1948-57 and 1958-69. (Author Modified Abstract) (U)

AD- 757 851 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Antarctic Research aboard NORTHWIND in February 1972, (U)

72 5P Reid,Joseph L. ;Moynihan, Martin J. ;Anderson,George C. ;
CONTRACT: N00014-69-A-0200-6006, NSF-GV-29960

UNCLASSIFIED REPORT
Availability: Pub. in the Antarctic Jnl. of the United States, v7 n4 p123-125 Jul/Aug 72.

DESCRIPTORS: (*OCEANOGRAPHIC DATA, *ANTARCTIC REGIONS), SEA WATER, PACIFIC OCEAN, TEMPERATURE, SALINITY, PHOSPHATES, NITRATES, SILICATES, NITRITES (U)
IDENTIFIERS: NORTHWIND VESSEL (U)

In February 1972, USCGC Northwind carried out oceanographic investigations in the Southeast Pacific Basin in the area bounded roughly by 68 degrees and 76 degrees S, and 152 degrees and 171 degrees W., just north of the Ross Sea. A series of north-south transects of the Basin was made with 22 deep hydrographic stations for temperature, salinity, oxygen, phosphate, nitrate, silicate, and nitrite. (Author) (U)

AD- 757 837 8/7 8/11
MASSACHUSETTS INST OF TECH CAMBRIDGE DEPT OF EARTH AND PLANETARY SCIENCES

Sn Velocities and the Composition of the Lithosphere in the Regionalized Atlantic, (U)

SEP 72 5P Hart,Robert S. ;Press, Frank ;
CONTRACT: N00014-67-A-0204-0048

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v78 n2 p407-411, 10 Jan 73.
SUPPLEMENTARY NOTE: Revision of report dated 26 Jun 72.

DESCRIPTORS: (*SEISMIC WAVES, LITHOSPHERE), (*ATLANTIC OCEAN, MARINE GEOLOGY), VELOCITY, OCEAN BOTTOM TOPOGRAPHY, MINERALS, ROCK, ELASTIC PROPERTIES, GEOLOGIC AGE DETERMINATION, CHEMICAL PROPERTIES (U)
IDENTIFIERS: NORTH ATLANTIC OCEAN, OCEAN BOTTOM SPREADING (U)

S sub n is a short-period shear wave that propagates in the lithosphere. For long paths, the wave may travel well below the M discontinuity as it seeks a least-time path. It cannot penetrate the partially molten asthenosphere. More than +30 S sub N phases from earthquakes in the North Atlantic, recorded by stations on islands and surrounding coasts, have been analyzed by regression to obtain regionalized velocities corresponding to different age zones of the Atlantic lithosphere. (Author Modified Abstract) (U)

AD- 757 793 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY SAN DIEGO CALIF MARINE PHYSICAL LAB

Shipboard Cruise Report on Leg Five of Expedition South Tow. (U)

DESCRIPTIVE NOTE: Summary rept., JAN 73 12P Spiess,Fred N. ;Malfait, Bruce ;Lonsdale,Peter F. ;Tyce,Robert C. ;
REPT. NO. SIO-Ref-73-1, MPL-U-56/72
CONTRACT: N00014-69-A-0200-6002, NSF-GA-31377

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN BOTTOM, SEDIMENTATION), EROSION, TRANSPORT PROPERTIES, MARINE GEOPHYSICS, PACIFIC OCEAN, OCEAN BOTTOM TOPOGRAPHY (U)

Fifteen and one-half days of a 21-day cruise were devoted to deep-tow surveys of the central part of the Carnegie Ridge, midway between the Galapagos Islands and the Ecuadorian mainland. For the remainder of that time standard underway geophysical programs were carried out. The deep-tow instrument package was used to explore phenomena caused by erosion and transportation of pelagic sediments, at depth of 2 to 3 km. Information from its seismic and photographic systems was supplemented by five current meter stations and eight gravity cores. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 757 742 8/3
ROSENSTIEL SCHOOL OF MARINE AND ATMOSPHERIC SCIENCE MIAMI FLA

Observations and First Results from Project SYNOPS 71. (U)

DESCRIPTIVE NOTE: Scientific rept., FEB 73 147P Duing,Walter ;
REPT. NO. UM-RSMAS-73010
CONTRACT: N00014-67-A-0201-0013
PROJ: NR-083-060

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN CURRENTS, ATLANTIC OCEAN), (*TIDES, DIURNAL VARIATIONS), TEMPERATURE, GRAPHICS, CURVE FITTING, STATISTICAL DISTRIBUTIONS, DATA PROCESSING, FLORIDA (U)
IDENTIFIERS: *FLORIDA CURRENT, GRADIENTS, TEMPERATURE (U)

The scientific objectives, the design criteria, and field operations of Project SYNOPS 71 are described. The results show that dominant fluctuations range on time scales from semidiurnal tides up to several days. The previously observed temporary occurrence of deep southward flow is interpreted as a manifestation of a barotropic wave of a 4-to-5-day period and an amplitude of about 15 cm/sec superimposed on the mean baroclinic profile of the Florida Current. Topographic effects seem to be responsible for the baroclinic structure of this wave over the Miami Terrace. Additional consequences of the several-day wave are horizontal east-west shifts of the current, fluctuations of mass transport, and horizontal advective shifts of the thermal front, leading to local temperature anomalies of plus or minus 2C at the depth of the largest horizontal temperature gradient. (Author Modified Abstract) (U)

AD- 757 734 8/3 8/10
MASSACHUSETTS INST OF TECH CAMBRIDGE

Oceanographic Research At MIT in the Departments of Earth and Planetary Sciences and Meteorology. (U)

DESCRIPTIVE NOTE: Annual rept. 1 Jan-31 Dec 72,
MAR 73 36P Beardsley,Robert C. ;Edmond, John M. ;Press,Frank ;Southard,John B. ; Stommel,Henry M. ;
REPT. NO. 73-2
CONTRACT: N00014-67-A-0204-0048
PROJ: NR-083-157

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEANOGRAPHIC DATA, REPORTS), NAVAL RESEARCH, TIDES, OCEAN WAVES, INTERACTIONS, WIND, OCEAN CURRENTS, GRAVITY, INDIAN OCEAN, SEDIMENTATION, TRANSPORT PROPERTIES, GEOCHEMISTRY, STRUCTURAL GEOLOGY, HEAT TRANSFER, ANOMALIES, DEPTH FINDING, ATLANTIC OCEAN (U)
IDENTIFIERS: AIR WATER INTERACTIONS, PLATE TECTONICS, GRAVITY WAVES, INTERNAL WAVES (U)

The following topics are discussed: Ocean-island interaction; Ocean circulation model studies; Observations of the Equatorial Undercurrent in the Indian Ocean; Ocean bottom pressure fluctuations; Mechanics of bottom sediment movement; Trace element geochemistry; Structural evolution of an oceanic plate; Driving mechanisms of plate tectonics; Marine geophysics. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 757 455 8/10
SACLANT ASW RESEARCH CENTRE LA SPEZIA (ITALY)

Geophysical Charts of the Mediterranean Sea, (U)

FEB 73 8P Allan,Thomas D. ;Morelli, Carlo ;
REPT. NO. SACLANTCEN-SM-2

UNCLASSIFIED REPORT

DESCRIPTORS: (*MARINE GEOPHYSICS, *MEDITERRANEAN SEA), NAVIGATION CHARTS, HYDROGRAPHIC SURVEYING, GRAVITY, ANOMALIES, GEOMAGNETISM, DEPTH FINDING, ECHO RANGING (U)
IDENTIFIERS: MAGNETIC ANOMALIES, BATHYMETRY, GEOPHYSICAL SURVEYS, ANOMALIES, GRAVITY, Most Project-2 (U)

An 80,000 n.mi geophysical survey of the whole of the Western Mediterranean, the Aegean, and the area sourth of Crete is presented on 1:750 000 charts of contoured bathymetry, free-air gravity anomalies, simple Bouguer anomalies and total magnetic intensity. The thirty-six charts are available rolled, with a short narrative. References to a longer explanatory test are given. (Author) (U)

AD- 757 425 8/3 4/1
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF ADVANCED OCEAN ENGINEERING LAB

Advanced Ocean Engineering Laboratory Technical Progress report. (U)

DESCRIPTIVE NOTE: Rept. of 1 Apr-31 Dec 72,
FEB 73 51P Nierenberg,William A. ;Munk, Walter H. ;Snodgras,Frank E. ;Cox,Charles S. ;Gregg,Michael C. ;
REPT. NO. AOEL-35, SIO-Ref-73-3
CONTRACT: N00014-69-A-0200-6039, ARPA Order-2185

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated 30 Jun 72, AD-748 024.

DESCRIPTORS: (*OCEAN CURRENTS, THERMAL PROPERTIES), (*OCEAN WAVES, SURFACE PROPERTIES), (*ATMOSPHERIC MOTION, INTERACTIONS), MICROSTRUCTURE, SURFACE TEMPERATURE, PROBES, SALINITY, SURFACE ROUGHNESS, CONVECTION(HEAT TRANSFER), ELECTROMAGNETIC RADIATION, STABILITY, BUOYANCY, OCEANOGRAPHIC EQUIPMENT, MEASUREMENT, ANEMOMETERS, TURBULENCE, WIND (U)
IDENTIFIERS: *AIR WATER INTERACTIONS, *SEA WATER, INTERNAL WAVES, SURFACE WAVES (U)

The report reflects the technical status of internal/surface wave interaction and microstructure projects conducted within the Advanced Ocean Engineering Laboratory at the Scripps Institution of Oceanography. These projects are: (1) Thermal Microstructure - to examine in detail the structure and dynamics of temperature and salinity and (2) Atmospheric Boundary Layer - to provide an understanding of the interaction between atmospheric boundary effects and surface waves. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 757 123 8/7 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Antarctic Quaternary Climatic Record and Radiolarian and Diatom Extinctions. (U)

DESCRIPTIVE NOTE: Journal article,
72 9P Hays,J. D. ;Donahue,Jessie G. ;
REPT. NO. LDGO-1643
CONTRACT: N00014-67-A-0108-0004, NSF-GA-21174
PROJ: NR-083-142

UNCLASSIFIED REPORT

Availability: Pub. in International Union of Geological Sciences, Series B, n1 p733-738 1972.
SUPPLEMENTARY NOTE: Sponsored in part by Grant NSF-GA-19690. Offprint from Antarctic Geology and Geophysics.

DESCRIPTORS: (*OCEAN BOTTOM SAMPLING, CLIMATE), (*ANTARCTIC REGIONS, CLIMATE), RADIOLARIA, ALGAE, PLANTS(BOTANY), STRATIGRAPHY, CORRELATION TECHNIQUES, GEOMAGNETISM, DEEP WATER, SEA ICE, SEDIMENTATION, PACIFIC OCEAN, MARINE GEOLOGY (U)
IDENTIFIERS: *PALEOCLIMATOLOGY, PALEOMAGNETISM, BIOCLIMATOLOGY, DIATOMS (U)

The combined radiolarian and diatom stratigraphy of Antarctic deep-sea sediments provides numerous closely spaced datum levels. The fossil record of these sediments indicates a general cooling trend during the last 2.5 m yr. There is a pronounced cooling at about 700,000 yr which is followed by about seven strong climatic oscillations. During the last 2.5 m yr four of the five species of Radiolaria that became extinct do so in close proximity to geomagnetic reversals. Diatom extinctions show a much lower degree of correlation with geomagnetic reversals. The prominent lithological change from nearly barren sediments below to highly diatomaceous sediments above that occurred in Antarctic deep-sea sediments about 2 m yr ago may be related to the formation of the large ice shelves and the concomitant increase of sea-ice volume around the Antarctic continent. (Author) (U)

AD- 757 067 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Temperature Data from the Pacific and Indian Abyssal Waters - (from the CIRCLE, SCAN and SEVEN-TOW Expedtions), (U)

72 49P Chung,Y. ;Down,C. ; Sclater,J. G. ;
REPT. NO. SIO-Ref-72-85
CONTRACT: N00014-69-A-0200-6006, NSF-GA-29159X

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEANOGRAPHIC DATA, *PACIFIC OCEAN), (*INDIAN OCEAN, OCEANOGRAPHIC DATA), SEA WATER, TEMPERATURE, DEEP WATER (U)
IDENTIFIERS: ABYSSAL ZONE, MEASUREMENT, TEMPERATURE (U)

The report is a continuous data report to the 'Temperature Data from the Pacific Abyssal Water', a data report published by the Scripps Institution of Oceanography (Reference 69-17). The abyssal water temperature data covered in this report were accumulated during heat-flow measurements from three Scripps expeditions: the CIRCE, SCAN and SEVEN-TOW. (Author Modified Abstract) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 756 972 8/10 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Sediment Distribution in the Oceans: The Atlantic, (U)

JUL 72 35P Ewing,Maurice ;Carpenter, George ;Windisch,Charles ;Ewing,John ;
REPT. NO. LDGO-1850
CONTRACT: N00014-67-A-0108-0004
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Geological Society of America Bull. v84 p71-88 Jan 73.
SUPPLEMENTARY NOTE: Revision of report dated 12 May 72.

DESCRIPTORS: (*ATLANTIC OCEAN, SEDIMENTATION), OCEAN BOTTOM TOPOGRAPHY, ECHO RANGING, DEEP WATER, REFLECTION, REFRACTION, THICKNESS, FORAMINIFERA, CARBONATES, CALCIUM COMPOUNDS, CONTINENTAL SHELVES, MAPS (U)
IDENTIFIERS: MIDATLANTIC RIDGE, OCEAN BOTTOM SPREADING, SEISMIC REFRACTION METHOD, SEISMIC REFLECTION METHOD (U)

Seismic reflection and refraction data from about 750,000 km of traverse in the Atlantic Ocean are used to construct a sediment isopach map. Sediment distribution is found to be locally and regionally complex but is largely controlled by sea-floor spreading and proximity to continental sources, although other factors (for example, CaCO3 compensation level) are important. The thinnest sediments are confined to the axial zone of the mid-Atlantic ridge primarily because of the youth of this region. Sediments progressively thicken down the flanks and into the basins--a pattern in accord with sea-floor spreading theories. (Author Modified Abstract) (U)

AD- 756 971 8/10 4/2
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Climatic Record in North Atlantic Deep-Sea Core V23-82: Comparison of the Last and Present Interglacials Based on Quantitative Time Series, (U)

JUL 72 7P Sancetta,Constance ;Imbrie, John ;Kipp,N. G. ;McIntyre,Andrew ; Ruddiman,W. F. ;
REPT. NO. LDGO-1886
CONTRACT: N00014-67-A-0108-0004, NSF-GA-29460
PROJ: NR-083-142

UNCLASSIFIED REPORT

Availability: Pub. in Quaternary Research, v2 n3 p363-367 Nov 72.
SUPPLEMENTARY NOTE: Sponsored in part by Grant NSF-GX-28672. Prepared in cooperation with Brown Univ., Providence, R. I.

DESCRIPTORS: (*CLIMATE, OCEAN BOTTOM SAMPLING), (*ATLANTIC OCEAN, CLIMATE), FORAMINIFERA, TEMPERATURE, SALINITY, CORRELATION TECHNIQUES, TIME SERIES ANALYSI(U)
IDENTIFIERS: NORTH ATLANTIC OCEAN, *PALEOCLIMATOLOGY (U)

In North Atlantic deep-sea core V23-82, changing surface water conditions are revealed by changing composition of fauna and flora. Sedimentation rate seems to vary little so that approximate dating of climatic events within the X zone of Ericson is possible. These include an interglacial temperature maximum at 124,000 YBP; start of the post-Eemian cooling at about 116,000 YBP; and peak cool conditions at about 110,000 YBP, followed by warming. Drop in summer and winter temperatures about two-thirds of the way towards full glacial values and a significant drop of salinity is suggested by quantitative paleo-environmental analysis of the 110,000 YBP cold episode. If the Eemian is taken as the analog of the present interglacial, a point in time 116,000 YBP becomes the historical model for today's ocean, and the North Atlantic is now approaching a time of severe cooling. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 756 661 6/3 8/1
UNIVERSITY OF SOUTHERN CALIFORNIA LOS ANGELES DEPT OF BIOLOGICAL SCIENCES

Drift Station Biology: Zooplankton Taxonomy and Sorting Programs. (U)

DESCRIPTIVE NOTE: Final rept. Sep 69-Oct 72,
JAN 73 45P Fernandez,Hector R. ;
CONTRACT: N00014-67-A-0269-0013
PROJ: NR-307-270

UNCLASSIFIED REPORT

DESCRIPTORS: (*PLANKTON, ARCTIC OCEAN), (*AQUATIC ANIMALS, ARCTIC OCEAN), (*MARINE BIOLOGY, ARCTIC OCEAN), CRUSTACEA, IDENTIFICATION, CLASSIFICATION, DISTRIBUTION, MORPHOLOGY(BIOLOGY) (U)
IDENTIFIERS: *ZOOPLANKTON, TAXONOMY (U)

The taxonomic studies of the USC Arctic Project are briefly summarized. This report includes a description of the practical taxonomic guides, the sorting program and studies which were derived from the sorting program. This work has two main objectives, first the identification of Arctic zooplankton, and second a more detailed study of the biology of some of the organisms, to form the basis for biochemical and physiological investigations. The report also includes a list of stations and of the organisms identified. (Author) (U)

AD- 756 660 6/3 8/1
UNIVERSITY OF SOUTHERN CALIFORNIA LOS ANGELES DEPT OF BIOLOGICAL SCIENCES

Taxonomic Guides to Arctic Zooplankton (VI): Appendicularians of the Central Arctic Mysids of the Arctic Ocean and Confluent Seas Field Guide to Arctic Zooplanktonic Crustaceans Ostracods of the Central Arctic. (U)

DESCRIPTIVE NOTE: Technical rept. no. 2, 1959-1971, OCT 72 56P Leung,Yuk Maan ;
CONTRACT: N00014-67-A-0269-0013
PROJ: NR-307-270

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated Oct 72, AD-756 659.

DESCRIPTORS: (*PLANKTON, ARCTIC OCEAN), (*AQUATIC ANIMALS, ARCTIC OCEAN), (*MARINE BIOLOGY, ARCTIC OCEAN), CRUSTACEA, CLASSIFICATION, DISTRIBUTION, MORPHOLOGY(BIOLOGY) (U)
IDENTIFIERS: *ZOOPLANKTON, MYSIDACEA, TAXONOMY (U)

The compilation is composed of information on the five species of ostracods and five species of appendicularians found amongst central Arctic zooplankton: mysids from the central Arctic and peripheral seas; and a general guide to Arctic zooplanktonic crustaceans. Each guide contains dichotomous keys and complementary illustrations, special notes on individual species, and selected references to literature pertaining to the included groups. (Author Modified Abstract) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 756 659 6/3 8/1
UNIVERSITY OF SOUTHERN CALIFORNIA LOS ANGELES DEPT OF BIOLOGICAL SCIENCES

Taxonomic Guides to Arctic Zooplankton (V): Pelagic Polychaetes of the Central Arctic Basin. (U)

DESCRIPTIVE NOTE: Technical rept. no. 1, 1959-1972, OCT 72 49P Yingst,Douglas R. ;
CONTRACT: N00014-67-A-0269-0013
PROJ: NR-307-270

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated Aug 71, AD-734 174, and report dated Oct 72, AD-756 660.

DESCRIPTORS: (*AQUATIC ANIMALS, ARCTIC OCEAN), (*PLANKTON, ARCTIC OCEAN), (*MARINE BIOLOGY, ARCTIC OCEAN), CLASSIFICATION, DISTRIBUTION, MORPHOLOGY(BIOLOGY), CRUSTACEA (U)
IDENTIFIERS: *ZOOPLANKTON, POLYCHAETA, TAXONOMIC KEYS, TAXONOMY (U)

The compilation presents a detailed consideration of the different adult pelagic polychaetes found in the central Arctic Ocean. Emphasis has been placed on the familial level as information on the group is still inadequate to justify construction of generalized keys to species. Provided also are a discussion of basic polychaete morphology and terminology used in the guide, illustrations, dichotomous keys, and hints on methodology for handling preserved specimens. Selected references pertaining to polychaetes in general, as well as those concerning specific polychaetes in the guide, are also included. (Author Modified Abstract) (U)

AD- 756 636 8/3 9/2
DELAWARE UNIV NEWARK COLL OF MARINE STUDIES

A Refraction Study and Program for Periodic Waves Approaching a Shoreline, and Extending Beyond the Breaking Point. (U)

DESCRIPTIVE NOTE: Technical rept., NOV 72 124P Smith,Benjamin S. L. ; Camfield,Frederick E. ;
REPT. NO. CMS-2EN071, TR-16
CONTRACT: N00014-69-A-0407
PROJ: NR-388-096

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN WAVES, REFRACTION), (*BEACHES, OCEAN WAVES), BREAKWATERS, SPECTRUM ANALYZERS, OCEAN BOTTOM TOPOGRAPHY, COMPUTER PROGRAMS, GRAPHICS, CURVE FITTING (U)
IDENTIFIERS: BURROUGHS 5500 COMPUTERS, SHOALING (U)

The development and use of computerized methods for drawing refraction diagrams of waves approaching a coastline offers great advantages over manual techniques that were used in the past. The present computer programs for wave refraction have proved to be reliable, and compare well with manual techniques, but, as far as is known, they only consider refraction outside the breaker zone; there is no program--or even manual procedure--that fully considers refraction beyond the breaker zone. The study extends the computerized wave refraction process beyond the breaking zone and over shoaling areas. It applies experimental data to the irregular conditions encountered in shoaling areas, in such a way that a manageable and reliable program is achieved. This is done by means of graphical interpretation and mathematical treatment. (Author Modified Abstract) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 756 619 8/8 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Surface Circulation of Lakes and Nearly Land-Locked Seas. (U)

DESCRIPTIVE NOTE: Technical rept., OCT 72 7P Emery,K. O. ;Csanady,G. T. ;
REPT. NO. WHOI-73-13, WHOI-Contrib-2965
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT
Availbility: Pub. in Proceedings of the National Academy of Sciences, v70 n1 p93-97 Jan 73.

DESCRIPTORS: (*LAKE WAVES, MOTION), (*OCEAN CURRENTS, THEORY), WIND, SURFACE PROPERTIES, INTERACTIONS, DRAG, MAPPING, ESTUARIES, INLAND WATERWAYS, NORTHERN HEMISPHERE (U)
IDENTIFIERS: AIR WATER INTERACTIONS, LAGOONS (U)

The pattern of surface circulation has been mapped for more than 40 lakes, marginal seas, estuaries, and lagoons. All are within the northern hemisphere, and all except one are known to have a counterclockwise pattern. This consistent pattern is attributed to the drag of wind blowing across the bodies of water. Warmer surface water is displaced to the right-hand shore zone (facing downwind), where it produces greater surface turbulence and, thus, greater wind drag. This effect leads to counterclockwise water circulation regardless of the direction and, within limits, the duration of the wind. (Author) (U)

AD- 756 618 8/7 8/10 8/14
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Magnetic Smooth Zones in the South Atlantic. (U)

DESCRIPTIVE NOTE: Technical rept.,
OCT 72 7P Mascle,J. ;Phillips,J. D.
;
REPT. NO. WHOI-73-6
CONTRACT: N00014-66-C-0241, NSF-GA-16098
PROJ: NR-083-004

UNCLASSIFIED REPORT
Availability: Pub. in Nature, v240 n5376 p80-84, 10 Nov 72.
SUPPLEMENTARY NOTE: Sponsored in part by Grant NSF-GX-28193. Revision of report dated 15 May 72.

DESCRIPTORS: (*ATLANTIC OCEAN, MARINE GEOLOGY), (*GEOMAGNETISM, OCEAN BOTTOM), OCEAN BOTTOM TOPOGRAPHY, MAPPING (U)
IDENTIFIERS: MAGNET PROJECT, MAGNETIC ANOMALIES, OCEAN BOTTOM SPREADING, PLATE TECTONICS, SOUTH ATLANTIC OCEAN (U)

Aeromagnetic profiles show two types of smooth magnetic zone in the South Atlantic symmetrically positioned about the Mid-Atlantic Ridge. The first borders the continental margins off Argentina and the Union of South Africa and the second extends over part of the Argentine-Brazil and Angola-Cape basins. The origin of the first zone may be related to the tectonic and/or diagenetic processes associated with the initial rifting of South America from Africa and the second can be simply explained by seafloor spreading during Middle-Late Cretaceous time when the polarity of the Earth's field was relatively constant. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 756 617 8/1 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

The Exploration of Submarine Canyons and Their Benthic Faunal Assemblages. (U)

DESCRIPTIVE NOTE: Technical rept.,
FEB 73 13P Rowe,Gilbert T. ;
REPT. NO. WHOI-73-5, WHOI-Contrib-2864
CONTRACT: N00014-66-C-0241, NSF-GA-31235
PROJ: NR-083-004

UNCLASSIFIED REPORT
Availability: Pub. in Proceedings of the Royal Society of Edinburgh (B), v73 n17 p159-169 1971/1972.

DESCRIPTORS: (*OCEAN BOTTOM TOPOGRAPHY, EXPLORATION), (*MARINE BIOLOGY, ATLANTIC OCEAN), AQUATIC ANIMALS, SEDIMENTATION, OCEAN CURRENTS, DEEP WATER, FISHES, MOBILITY (U)
IDENTIFIERS: SUBMARINE CANYONS (U)

The geological exploration of submarine canyons and valleys began late in the nineteenth century. Theories of canyon genesis are many, but the probable causes are turbidity currents or sediment slumps, or both. Recent biological investigations indicate that the faunal composition of canyons is quite different from adjacent depths without canyons. The predominance of motility in the fauna implies that canyons today are physically more dynamic than previously expected. Motility could be an adaptive strategy for survival in an unstable sedimentary environment, or the species may be trophic opportunists which are able to take advantage of the entrapment by canyons of large aggregates of organic detritus. (Author) (U)

AD- 756 008 8/7 8/14
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Late Mesozoic Evolution of the Western Pacific Ocean, (U)

JUN 72 19P Larson,Roger L. ;Chase, Clement G. ;
REPT. NO. LDGO-1871
CONTRACT: N00014-67-A-0108-0004, NSF-GA-27281
PROJ: NR-083-142

UNCLASSIFIED REPORT

Availability: Pub. in Geological Society of America Bulletin, v83 p3627-3643 Dec 72.
SUPPLEMENTARY NOTE: Prepared in cooperation with Minnesota Univ., Minneapolis. Dept. of Geology and Geophysics. Revision of report dated 17 Apr 72.

DESCRIPTORS: (*OCEAN BOTTOM, *GEOMAGNETISM), (*PACIFIC OCEAN, MARINE GEOLOGY), GEOLOGIC AGE DETERMINATION, OCEAN BOTTOM TOPOGRAPHY, SEDIMENTATION, ECHO RANGING, LITHOSPHERE, MOTION, ANOMALIES (U)
IDENTIFIERS: MAGNETIC ANOMALIES, OCEAN BOTTOM SPREADING, *PALEOMAGNETISM, PLATE TECTONICS (U)

A set of east-trending magnetic anomalies located in the western equatorial Pacific Ocean near the Phoenix Islands is Early Cretaceous in age. The use of magnetic reversal model studies shows that this lineated anomaly pattern correlates with one east of Japan that trends east, and with one west of Hawaii that trends northwest. These patterns were formed in their present relative positions, but about 40 degrees (4,500 km) south of their present geographic locations. The configuration of these three contemporaneous sets of magnetic anomalies implies that the Late Mesozoic tectonic pattern consisted of five spreading centers joined at two triple points. In this interpretation, the oldest part of the Pacific Ocean lies just east of the Mariana Trench and is Early Jurassic in age. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 755 732 8/3 8/10
CHICAGO UNIV ILL FLUID DYNAMICS AND SEDIMENT TRANSPORT LAB

The Role of Surface Tension in Breaking Waves. (U)

DESCRIPTIVE NOTE: Technical rept.,
OCT 72 36P Miller,Robert L. ;
REPT. NO. TR-13
CONTRACT: N00014-67-A-0285-0013
PROJ: NR-388-074

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN WAVES, *INTERFACIAL TENSION), VISCOSITY, ATLANTIC OCEAN, PACIFIC OCEAN, SIMULATION, COASTAL REGIONS (U)
IDENTIFIERS: BREAKING WAVES (U)

Breaking criteria in the vicinity of the crest, such as limit crest angle and limit form, and larger dimensions such as limit height (H/L) and breaker height (H sub b/d sub b), are found experimentally to be significantly affected by change in surface tension. A number of wave types were examined, including periodic waves, solitary waves, bores, and standing waves, over both constant depth and uniform slopes. Variations in natural waters in some cases were found to be of equivalent magnitude to those induced for the experiments. The conclusion is drawn that surface tension should be taken into account in development of a satisfactory theory of breakers. It is also an important factor in experimental studies, particularly engineering model studies involving breaking waves on coastal structures and in ship performance. (Author) (U)

AD- 755 669 8/7 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY SAN DIEGO CALIF MARINE PHYSICAL LAB

Marine Seismic Refraction Studies near Kodiak, Alaska, (U)

FEB 72 6P Shor,George G. , Jr.;Von Huene,Roland ;
REPT. NO. MPL-U-71/71
CONTRACT: N00014-69-A-0200-6002
PROJ: NR-260-103

UNCLASSIFIED REPORT
Availability: Pub. in Geophysics, v37 n4 p697-700 Aug 72.
SUPPLEMENTARY NOTE: Revision of report dated 25 Oct 71.

DESCRIPTORS: (*OCEAN BOTTOM, STRUCTURAL GEOLOGY), MARINE GEOPHYSICS, SEISMIC WAVES, REFRACTION, STRATIGRAPHY, PACIFIC OCEAN, ALASKA (U)
IDENTIFIERS: SEISMIC REFRACTION, KODIAK(ALASKA) (U)

Six seismic refraction stations near Kodiak, Alaska, have been reinterpreted with the use of newer reflection and gravity data. The oceanic basement appears to be continuous and nearly horizontal from the Aleutian Trench to a point near Kodiak Island; the oceanic crust can be followed beneath the shelf, dipping down under the continent. The mantle depth beneath the shelf is 20 to 23 km. A major structural change (probably a fault) occurs at the southeast side of Kodiak Island. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 755 611 8/3
RHODE ISLAND UNIV KINGSTON GRADUATE SCHOOL OF OCEANOGRAPHY

Edge Waves with Current Shear, (U)

JUL 72 9P Kenyon,Kern E. ;
REPT. NO. Ref-72-14
CONTRACT: N00014-68-A-0215-0003

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v77 n33 p6599-6603, 20 Nov 72.
SUPPLEMENTARY NOTE: Revision of report dated 5 Apr 72.

DESCRIPTORS: (*OCEAN WAVES, REFRACTION), (*OCEAN CURRENTS, INTERACTIONS), MOMENTUM, MATHEMATICAL MODELS, COASTAL REGIONS (U)
IDENTIFIERS: LONGSHORE CURRENTS (U)

A normal-mode solution is found for hydrostatic edge waves in a longshore current with constant shear. At high frequencies the frequency difference between waves of the same wave number that propagate in two directions along the coast is proportional to the sum of the current shear and the Coriolis parameter. The low modes are more affected by the current shear than the higher modes. (Author) (U)

AD- 755 591 8/1
SCOTTISH MARINE BIOLOGICAL ASSOCIATION EDINBURGH OCEANOGRAPHIC LAB

Changes in the Distribution and Abundance of Zooplankton in the North Sea, 1948-1969, (U)

72 10P Colebrook,J. M. ;

UNCLASSIFIED REPORT
Availability: Pub. in Symposia of the Zoological Society of London and The Malacological Society of London, n29 p203-212 1972.

DESCRIPTORS: (*PLANKTON, *NORTH SEA), DISTRIBUTION, PERIODIC VARIATIONS, FOOD, ECOLOGY, MARINE BIOLOGY, SAMPLERS, WATER POLLUTION, ABUNDANCE, DETECTION, GREAT BRITAIN (U)

Data from the Continuous Plankton Recorder Survey have been used to provide information about the year-to-year fluctuations in the standing crops of the zooplankton of the North Sea for the period 1948-1969. A marked feature of the fluctuations has been a progressive change affecting the abundance, the timing of the seasonal cycle, and the pattern of the geographical distribution of a number of species. A number of examples are given. (Author) (U)

AD- 755 580 6/3
SCOTTISH MARINE BIOLOGICAL ASSOCIATION EDINBURGH OCEANOGRAPHIC LAB

Populations of 'Sebastes' Larvae in the North Atlantic, (U)

71 9P Bainbridge,V. ;Cooper,G. A. ;
CONTRACT: F61052-67-C-0091

UNCLASSIFIED REPORT
Availability: Pub. in International Commission for the Northwest Atlantic Fisheries Research Bulletin, n8 p27-35 1971.

DESCRIPTORS: (*FISHES, LARVAE), (*LARVAE, *ATLANTIC OCEAN), ABUNDANCE, COLLECTING METHODS, SAMPLERS, MARINE BIOLOGY, STATISTICAL DATA, FOOD, PLANKTON, GREAT BRITAIN, NAVAL RESEARCH (U)
IDENTIFIERS: NORTH ATLANTIC OCEAN (U)

Young Sebastes, principally S. mentella Travin, from the predominant group of fish larvae in the central and eastern regions of the North Atlantic sampled by the Continuous Plankton Recorder Survey at a depth of 10 m. Four populations of larvae could be distinguished on the basis of geographical distributions, patterns of pigmentation and the month of first extrusion. These included a vast oceanic population centred in the Irminger Sea and three separate populations over the North American Shelf and Slope between Labrador and the Gulf of Maine. The seasonal occurrence of the four populations of larvae can be linked to the periods when food organisms were most plentiful in the areas in which they live. (Author) (U)

AD- 755 461 8/10 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Cruise Report: R/V CHAIN 107, 22 October-10 November 1972. (U)

DESCRIPTIVE NOTE: Technical rept.,
JAN 73 33P Gifford,J. ;
REPT. NO. WHOI-73-4
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEANOGRAPHIC EQUIPMENT, MOORING), (*OCEAN CURRENTS, MEASUREMENT), (*BUOYS, MAINTENANCE), ATLANTIC OCEAN, CONTINENTAL SHELVES, RECOVERY, CORROSION, FOULING, FISHES, OCEANOGRAPHIC SHIPS (U)
IDENTIFIERS: NORTH ATLANTIC OCEAN, CHAIN VESSEL (U)

CHAIN 107 carried out mooring work from 22 October to 10 November 1972. Eight moorings, set on previous cruises, were retrieved, two five-month moorings set, and four moorings were set and retrieved before the end of the cruise to perform an experiment for MIT. Work was done in the areas of the Continental Slope, Sites D, D1, L, and the MODE Site (all in the western North Atlantic). (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 755 446 8/10
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

RV'Thomas G. Thompson' Cruise TT-073. (U)

DESCRIPTIVE NOTE: Preliminary rept. 25 Sep-1 Nov 72,
NOV 72 6P Roden,Gunnar I. ;
REPT. NO. Ref-M72-80, PCR-73
CONTRACT: Nonr-477(37)
PROJ: NR-083-012

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEANOGRAPHIC DATA, *PACIFIC OCEAN), THERMOCLINES, TEMPERATURE, SALINITY, HYDROGRAPHIC SURVEYING, HAWAII (U)
IDENTIFIERS: NORTH PACIFIC OCEAN (U)

Cruise 073 of the Thomas G. Thompson studied the thermohaline structure of the transition zone between the subtropical and tropical water masses in the region to the east and southeast of Hawaii. (Author) (U)

AD- 755 155 8/8 8/3
LOUISIANA STATE UNIV BATON ROUGE COASTAL STUDIES INST

Preliminary River-Mouth Flow Model. (U)

DESCRIPTIVE NOTE: Technical rept.,
JAN 73 28P Waldrop,William R. ;
REPT. NO. TR-130
CONTRACT: N00014-69-A-0211-0003
PROJ: NR-388-002

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Reprint from coastal Studies Bull-7.

DESCRIPTORS: (*RIVER CURRENTS, FLOW FIELDS), (*OCEAN CURRENTS, INTERACTIONS), (*DELTAS, SEDIMENTATION), MATHEMATICAL MODELS, SALINITY, EQUATIONS OF MOTION, NONLINEAR DIFFERENTIAL EQUATIONS, PARTIAL DIFFERENTIAL EQUATIONS, HYDRODYNAMICS, GRAPHICS (U)
IDENTIFIERS: MISSISSIPPI RIVER, RIVER BASINS (U)

Various interactions between freshwater river effluents and saline ocean waters are responsible for sediment dispersal and formation of bars at delta river mouths. River mouth bars exhibit a wide variety of geometries and controlling depths, and navigating these regions is hazardous because of the paucity of updated hydrographic charts and the fact that essentially no predictive capability presently exists. In addition, the interface between freshwater and saltwater masses is constantly changing, and such interfaces drastically affect acoustical transmission and reflections. The number of complex variables interacting in the mixing region is three-dimensional, and simultaneous monitoring of these parameters over large areas for any length of time becomes a near-impossible logistical task. This paper presents progress to date on mathematically simulating, in a three-dimensional array, the flow patterns, density concentrations, and sediment dispersal at a river mouth. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 755 115 8/10
HAWAII INST OF GEOPHYSICS HONOLULU

Interactions of Biogenic Opal, Sediment, and Seawater in the Central Equatorial Pacific, (U)

DEC 72 91P Hurd,David Crockett ;
REPT. NO. HIG-72-22
CONTRACT: N00014-70-A-0016-0001
PROJ: NR-083-603

UNCLASSIFIED REPORT

DESCRIPTORS: (*SEDIMENTATION, *OCEANOGRAPHY), (*SILICATES, OCEANOGRAPHY), PACIFIC OCEAN, MARINE GEOLOGY, MATHEMATICAL MODELS, PLANKTON, SOLUBILITY, SILICON DIOXIDE, THESES (U)
IDENTIFIERS: BENTHOS, DISSOLVING (U)

Studies of dissolved silica concentrations and gradients in the interstitial waters of modern deep-sea sediments reveal much about the chemical reactions of biogenic opal, and of silicate mineral in general. They also further test the validity of models that have been proposed concerning long-term pH and dissolved silica control in the oceans. Thus the authors studied the solution rate of biogenic opal in near-surface sediments in the Central Equatorial Pacific. The scale height of the system studied suggests that diffusive and not advective processes are primarily responsible for the removal of dissolved silica in sediments. Solution budget calculations are reported. (U)

AD- 755 114 8/7
HAWAII INST OF GEOPHYSICS HONOLULU

Tertiary and Quaternary Sediments of the Ontong Java Plateau Area: Unpublished Results and Data, (U)

DEC 72 54P Valencia,Mark J. ;
REPT. NO. HIG-72-17, HIG-Data-21
CONTRACT: N00014-70-A-0016-0001, NSF-GA-11412

UNCLASSIFIED REPORT

DESCRIPTORS: (*MARINE GEOLOGY, *PACIFIC OCEAN), SEDIMENTATION, MARINE GEOPHYSICS, OCEAN BOTTOM TOPOGRAPHY, STRATIGRAPHY, PALEONTOLOGY, GEOLOGIC AGE DETERMINATION, THESES (U)
IDENTIFIERS: LITHOLOGY, PALEOMAGNETISM, DRILL CORE ANALYSIS (U)

Data and results from Tertiary and Quaternary Sediments of the Ontong Java Plateau Area, an unpublished Ph. D. dissertation, University of Hawaii, November 1972, are presented. Included are an analysis of western equatorial Pacific pre-Quaternary sediment age distribution and properties, and descriptions of the pre-Quaternary and Quaternary cores investigated. Characteristics described for the Quaternary cores are: location, depth, topography of collection site, smear slide description, lithology, C(14) and paleomagnetic chronology, micropaleontology, interpretation of core continuity, statistics of the measured physical, chemical, and faunal properties, and an annotated paleoclimatic chronostratigraphy. Pre-Quaternary core descriptions include location, depth, topography of the collection site, smear slide description, and micropaleontologic interpretations of age and continuity. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 755 089 8/11 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Focal Mechanisms and Plate Tectonics of the Southwest Pacific, (U)

JUN 72 39P Johnson,Tracy ;Molnar,Peter ;
REPT. NO. LDGO-1837, Scientific-2
CONTRACT: F19628-71-C-0245, ARPA Order-1795
PROJ: AF-1795
TASK: 179500
MONITOR: AFCRL 72-0701

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v77 n26 p5000-5032, 10 Sep 72.
SUPPLEMENTARY NOTE: Revision of report dated 6 Dec 71.

DESCRIPTORS: (*EARTHQUAKES, STRUCTURAL GEOLOGY), (*MARINE GEOPHYSICS, *PACIFIC OCEAN), LITHOSPHERE, MOTION, OCEAN BOTTOM TOPOGRAPHY, ROTATION, CONVERGENCE, NEW GUINEA, NEW ZEALAND (U)
IDENTIFIERS: *PLATE TECTONICS (U)

Ninety-six new focal mechanisms were determined for earthquakes on the belt of seismic activity separating the Pacific and Australian plates. The direction of convergence of these plates varies from NE-SW to E-W. The Australian plate underthrusts the Pacific plate to the ENE under the Solomon and New Hebrides islands and overthrusts the Pacific to the east along the Tonga-Kermadec arc and the North Island of New Zealand. The data for the Macquarie ridge concur with the idea that the pole of rotation for the Pacific and and Australian plates is nearby and to the east of this feature. The data also suggest a NNE-SSW convergence of the Pacific and Australian plates in northwestern New Guinea. The relative motions of the plates near the Bismarck Archipelago are complex because of the presence of at least three additional small plates. The data demonstrate that plate tectonics is applicable even for regions with dimensions of only a few hundred kilometers. Geologic data from New Guinea are used to speculate about earlier plate motions in that area. (U)

AD- 755 024 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

The Effects of Solid Earth Deformation on Global Ocean Tides, (U)

JUN 72 16P Hendershott,M. C. ;
CONTRACT: N00014-69-A-0200-6006

UNCLASSIFIED REPORT
Availability: Pub. in Geophysical Jnl. of the Royal Astronomical Social Society, v 29 p389-402 1972.

DESCRIPTORS: (*TIDES, HARMONIC ANALYSIS), SPECIAL FUNCTIONS(MATHEMATICAL), HYDRODYNAMICS, PARTIAL DIFFERENTIAL EQUATIONS (U)

Laplace's Tidal Equations (LTE) are modified to allow for the yielding of the solid Earth to tide generating forces and to the weight of the oceanic tidal column as well as for oceanic gravitational self-attraction. A realistic cotidal-corange chart for the global M(2) tide is used to show that the first effect is the order of the astronomical potential itself while the second and third are roughly one order of magnitude smaller. However, the later potential perturbations produce order one effects in the computed tide because they are much richer in high spherical harmonics than is the astronomical potential. The existence of an appreciable solid Earth tide significantly modifies the usual expressions for stored tidal energy, for dital energy flux for the rate of working on the oceans by tide generating bodies. An unexpectedly high value of Q(about 34) is found for the global M(2) tide. (Author) (U)

AD- 755 023 8/3 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Synoptic Time and Length Scales of Motion in the North Equatorial Current System and the Pacific Ocean, (U)

JUL 72 12P White,W. B. ;Evans,M. W. ;
CONTRACT: N00014-69-A-0200-6006

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v77 n30 p5971-5980, 20 Oct 72.
SUPPLEMENTARY NOTE: Report on North Pacific Experiment - NORPAX. Revision of report dated 20 Apr 72.

DESCRIPTORS: (*OCEAN CURRENTS, PACIFIC OCEAN), (*THERMOCLINES, TIME SERIES ANALYSIS), MOTION, TIDES, MOORING BUOYS, DIURNAL VARIATIONS, POWER SPECTRA, INERTIA, TEMPERATURE, CORRELATION TECHNIQUES (U)
IDENTIFIERS: NORTH PACIFIC OCEAN (U)

In the summer of 1967 two deep-moored buoys measured subsurface temperature data for nearly 2 months in the North Equatorial countercurrent near 119 degrees W. The power spectral density functions calculated from these time series indicate that most of the variance in temperature of the thermocline occurred near three principal time periods corresponding to the semidiurnal and diurnal tidal motions and to the inertial oscillation. The inertial periodicity is thought to be a manifestation in the sensors of the mooring motion induced by horizontal inertial currents. In the spring of 1969 two more buoys were moored near the location of the 1967 stations; the power spectral density functions from the newer buoys show approximately the same concentration of variance in temperature as the earlier observations did. (Author) (U)

AD- 754 843 8/10 8/1
WASHINGTON UNIV SEATTLE DEPT OF OCEANOGRAPHY

Preliminary Report, (RV Thomas G. Thompson Cruise 66). (U)

DESCRIPTIVE NOTE: Report for 20 Jan-2 Mar 72,
MAY 72 9P Campbell,Serena ;Owens,Tom ; Miller,R. M. ;
REPT. NO. PCR-66, Ref-M72-28
CONTRACT: N00014-67-A-0103-0014, NSF-GA-24875
PROJ: NR-083-012

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEANOGRAPHIC DATA, *PACIFIC OCEAN), SAMPLING, SALINITY, CHLOROPHYLLS, PLANKTON, NITROGEN, TEMPERATURE, PRESSURE, RESPIRATION, NITRATES, HYDROGRAPHIC SURVEYING, OCEANOGRAPHIC SHIPS (U)
IDENTIFIERS: NORTH PACIFIC OCEAN (U)

Cruise 666 of the Thomas G. Thompson was the sixth in a series of cruises to the oxygen deficient waters of the eastern topical North Pacific Ocean. A total of 47 chemical oceanography stations were occupied and routine chemical analysis were carried out on board ship. A Biochemical program was completed which investigated the following: ETS (Respiratory Electron Transport System), chlorophyll-carotenoid, incubation studies, and developmental work on the dissimilatory nitrate reductase assay. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 754 761 9/6 8/3 8/10
NAVAL UNDERSEA RESEARCH AND DEVELOPMENT CENTER SAN DIEGO CALIF

The Use of an Instrumented Marine Mammal as an Oceanographic Survey Platform. (U)

DESCRIPTIVE NOTE: Research and development rept.,
DEC 72 17P Evans,William E. ;
Leatherwood,James S. ;
REPT. NO. NUC-TP-331
PROJ: NUC-IR-R000-01, CNO-DV-106

UNCLASSIFIED REPORT

DESCRIPTORS: (*TELEMETER SYSTEMS, *OCEANOGRAPHIC DATA), (*CETACEA, TELEMETER SYSTEMS), TELEMETERING TRANSMITTERS, INSTRUMENTATION, TRACKING, ENVIRONMENT, OCEANS, AQUATIC ANIMALS, MAMMALS, TELEMETERING RECEIVERS (U)
IDENTIFIERS: *OCEANS, DOLPHINS(MAMMALS), *ENVIRONMENTS, *SURVEYS (U)

The paper reports the second phase of an effort to use instrumented marine mammals to measure selected environmental parameters and to relay data on these parameters to tracking aircraft and ultimately to orbiting satellites. A Pacific common dolphin, Delphinus delphis, was fitted with an instrument package and tracked from shipboard and from specially equipped Navy S-2D aircraft. The preferability of smaller odontocetes over larger mysticte as environmental survey platforms was demonstrated. Data collected compared favorably with data from previous radio tracks and with on-site measurements using conventional sampling techniques. Maximum transmitter range and optimum tracking and data collection altitudes were demonstrated for present systems. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 754 718 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Scattering of Rossby Waves by Partial Barriers. (U)

DESCRIPTIVE NOTE: Technical rept.,
OCT 71 9P McKee,W. D. ;
REPT. NO. WHOI-72-92, WHOI-Contrib-2807
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT
Availability: Pub. in Geophysical Fluid Dynamics, v4 p83-89 1972.

DESCRIPTORS: (*OCEAN WAVES, EQUATIONS OF MOTION), SCATTERING, MATHEMATICAL MODELS, ANTARCTIC REGIONS (U)
IDENTIFIERS: WAVE EQUATIONS, PLANE WAVES, *ROSSBY WAVES, DRAKE PASSAGE (U)

The scattering of Rossby waves by partial barriers is studied. It is found that only a small fraction of the wave energy will penetrate the gap between South America and Antarctica if the wave period is less than a month. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 754 645 8/3 20/4
CALIFORNIA UNIV BERKELEY HYDRAULIC ENGINEERING LAB

The Interaction of Waves and Turbulence in Water. (U)

DESCRIPTIVE NOTE: Technical rept.,
JUN 72 126P Skoda,John D. ;
REPT. NO. HEL-25-1
CONTRACT: DACW72-68-C-0033

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN WAVES, WIND), EQUATIONS OF MOTION, GRAVITY, VISCOSITY, GRAPHICS, INTERACTIONS, COMPUTER PROGRAMS, WATER WAVES, TURBULENCE, THESES (U)
IDENTIFIERS: *AIR WATER INTERACTIONS, GRAVITY WAVES, *TURBULENT FLOW (U)

The report investigates a system in which water waves are generated and propagated in a turbulent flow field. Growth of wind wave spectra and decay of monochromatic waves are considered. For monochromatic waves the turbulence in the water can greatly increase the rate of wave energy dissipation and that the data can be fitted by an equation with an eddy viscosity term proportional to the wave height, the phase speed of the waves, and the intensity of the larger scale turbulence. Growth of wind waves on turbulent water is faster than in still water; however, maximum wave height in turbulent water is always lower than in still water. Wave energy spectra at the longer fetches in turbulent water show more wave energy at low frequency and less at high frequency than those for still water. Turbulence in water alters the rate of transfer of energy from the wind to the waves, the maximum height allowed and the distribution of wave energy among the various frequencies. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 754 488 8/10 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Mid-Plate Tectonics in the Indian Ocean, (U)

AUG 72 11P Eittreim,S. L. ;Ewing,J. ;
REPT. NO. LDGO-1879
CONTRACT: N00014-67-A-0108-0004
PROJ: NR-083-142

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Revision of report dated 17 Apr 72.

DESCRIPTORS: (*MARINE GEOPHYSICS, *INDIAN OCEAN), SEDIMENTATION, FAULTS(GEOLOGY), OCEAN BOTTOM TOPOGRAPHY (U)
IDENTIFIERS: OCEAN BOTTOM SPREADING, OCEAN RIDGES, BATHYMETRY, *PLATE TECTONICS (U)

Zones of faulted and folded sediments occur at and near the southern margin of the Ganges cone. The cone sediments act as sensitive indicators of crustal distortion, since they consist generally of continuous, flat-lying sediments that are well stratified. The strike of the faults and folds is approximately 10 degrees south of east which is about normal to the direction of compression in the Himalayas on the north end of the Indian plate. These faults and folds lie within the NW-SE trending zone of seismicity in the northeast Indian Ocean which has been speculated to be a nascent arc-trench, about midway between the spreading mid-ocean ridge on the south and the Himalayan front on the north. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 754 394 20/1 8/10 17/1
NAVAL ORDNANCE LAB WHITE OAK MD

Long Range Acoustic Transmission Loss in the Northern Denmark Strait, (U)

OCT 72 23P Bradley,David L. ;Colvin, Gabriel M. ;
REPT. NO. NOLTR-72-178
PROJ: A370-370C/292-B/2f00-121-709

UNCLASSIFIED REPORT

DESCRIPTORS: (*UNDERWATER SOUND, ARCTIC OCEAN), STRAITS, SEA ICE, DETECTORS, NAVAL AIRCRAFT, SONOBUOYS, POLAR REGIONS, ATTENUATION (U)
IDENTIFIERS: BATHYMETRY, *DENMARK STRAIT (U)

Long range acoustic transmission loss measurements were made in the marginal ice zone of the northern Denmark Strait area using two aircraft. One aircraft flew prearranged tracks, dropping standard U. S. Navy explosive charges, while the second aircraft remained in the area of deployed calibrated sonobuoys, acting as a receiving platform. Received signals were recorded broadband aboard the monitoring aircraft. These broadband recordings were analyzed by filtering, squaring and integrating to obtain energy density in selected 1/3 octave bands. (Author) (U)

AD- 754 354 8/3
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

A Numerical Model Depicting a Wind-Driven Circulation in an Ocean Basin Containing an Island. (U)

DESCRIPTIVE NOTE: Master's thesis,
SEP 72 87P Sullivan,James Vincent , Jr;

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN CURRENTS, WIND), MATHEMATICAL MODELS, ISLANDS, OCEAN MODELS, TRANSPORT PROPERTIES, DEPTH FINDING, COMPUTER PROGRAMS, INTERACTIONS, NAVAL RESEARCH, THESES (U)
IDENTIFIERS: OCEANS, *AIR WATER INTERACTIONS, CIRCULATION (U)

A numerical model was developed depicting the wind-driven circulation in an ocean basin containing an island. This linear, barotropic, filtered model was utilized to test and evaluate the 'Hole Relaxation' technique in preparation for future comparative studies with a free surface model and later incorporation in a multi-level world-ocean model with islands. Eight different data cases were studied to evaluate the model's ability to properly treat a variety of island sizes and locations. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 754 281 8/3
PHYSICAL DYNAMICS INC BERKELEY CALIF

Interaction of Non-Saturated Surface Gravity Waves with Internal Waves. (U)

DESCRIPTIVE NOTE: Technical rept.,
OCT 72 98P Thomson,J. Alex ;West, Bruce J. ;
REPT. NO. PD-72-023
CONTRACT: F30602-72-C-0494, ARPA Order-1649
MONITOR: RADC TR-72-280

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN WAVES, INTERACTIONS), EQUATIONS OF MOTION, WAVE FUNCTIONS, POWER SPECTRA, OCEAN CURRENTS, APPROXIMATION(MATHEMATICS), KINEMATICS (U)
IDENTIFIERS: WKB APPROXIMATION, BORN APPROXIMATION, SCATTERING CROSS SECTIONS, GRAVITY WAVES, INTERNAL WAVES (U)

The interaction of surface gravity waves with non-dispersive internal waves is studied by solving the equations of motion in a coordinate system moving with the time independent surface current system induced by the internal wave. A range of surface wavelengths is found which is reflected by the current system (as seen in this coordinate system). In the ocean-fixed frame these waves are identified as waves which interact strongly with the internal waves and exchange energy with it. The effect on the surface wave pattern and the relation to surface slicks are discussed. (Author) (U)

AD- 754 155 8/10 8/7
TEXAS A AND M UNIV COLLEGE STATION DEPT OF OCEANOGRAPHY

Deep-Sea Ironstone Deposits in the Gulf of Mexico, (U)

MAY 72 13P Pequegnat,Willis E. ;Bryant, William R. ;Fredericks,Alan D. ;McKee, Thomas R. ;Spalding,Roy ;
CONTRACT: N00014-68-A-0308-0002, AT(40-1)-3852

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Sedimentary Petrology, v42 n3 p700-710 Sep 72.
SUPPLEMENTARY NOTE: Sponsored in part by Grant NSF-GA-1296. Revision of report dated 4 Feb 72.

DESCRIPTORS: (*OCEAN BOTTOM, *IRON), (*MINERALS, MEXICO GULF), (*OCEAN BOTTOM SAMPLING, *MEXICO GULF), SEDIMENTATION, SILT, DEEP WATER, SEA WATER, INTERFACES, OCEAN CURRENTS (U)

A silty ironstone (up to 47 percent Fe by dry weight) of unique type was dredged by the Texas A+M University research vessel Alaminos from 16 locations in deep water of the Gulf of Mexico. The most extensive known development of this ironstone is on the eastern part of the Mississippi Fan at depths around 3,200 m. This development probably owes its existence to the concurrence here of a swift bottom current and high concentrations of dissolved oxygen. Present evidence indicates that undisturbed ironstone forms a crust at the water-sediment interface. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 754 134 8/10 8/7
HAWAII INST OF GEOPHYSICS HONOLULU

Sediment Distribution in the Hawaiian Archipelago, (U)

DEC 70 7P Fan,Pow-Foong ;Grunwald, Ross R. ;
REPT. NO. HIG-Contrib-410
CONTRACT: Nonr-3748(05)
PROJ: NR-093-603

UNCLASSIFIED REPORT
Availability: Pub. in Pacific Science, v25 n4 p484-488 Oct 71.
SUPPLEMENTARY NOTE: Prepared in cooperation with South Dakota School of Mines and Technology, Rapid City. Dept. of Geology and Geological Engineering.

DESCRIPTORS: (*OCEAN BOTTOM, SEDIMENTATION), CARBONATES, CALCIUM COMPOUNDS, MUD, CLAY, SILICATES, SHALLOW WATER, OCEAN BOTTOM SAMPLING, HAWAII, PACIFIC OCEAN (U)
IDENTIFIERS: SEDIMENTOLOGY (U)

Four sediment types were differentiated in 125 samples of marine sediments taken from the sea floor around the Hawaiian Islands. These were: shallow-water carbonates and detritus around the islands, calcareous oozes on bathymetric highs distant from shore, brown clay on the Hawaiian Arch, and siliceous ooze in the Hawaiian Deep and west of the island of Hawaii. (Author) (U)

AD- 754 132 8/10
HAWAII INST OF GEOPHYSICS HONOLULU

Physical Properties of the Oceanic Crust. 3. Widespread Occurrence of a High-Velocity Basal Layer in the Pacific Crust Found with Repetitive Sources and Sonobuoys, (U)

71 19P Sutton,G. H. ;Maynard,G. L. ;Hussong,D. M. ;
REPT. NO. HIG-Contrib-381
CONTRACT: N00014-70-A-0016-0001, Nonr-3748(05)
PROJ: NR-083-603

UNCLASSIFIED REPORT
Availability: Pub. in The Structure and Physical Properties of the Earth's Crust - Geophysical Monograph Series, v14 p193-209 1971.
SUPPLEMENTARY NOTE: Sponsored in part by Grants NSF-GA-1639 and NSF-GA-15792.

DESCRIPTORS: (*OCEAN BOTTOM, STRUCTURAL GEOLOGY), PACIFIC OCEAN, MARINE GEOPHYSICS, SEISMIC WAVES (U)
IDENTIFIERS: OCEANIC CRUST, SEISMIC REFRACTION, SEISMIC REFLECTION, EARTH CRUST (U)

Recent innovations in seismic field techniques make it possible to identify a high-velocity basal crustal layer (about 7.1 to 7.7 km/sec, averaging 7.4 km/sec) at several locations in the Pacific Ocean basin. This layer, which usually is masked and is primarily identified from second arrivals, has been only infrequently reported from seismic measurements. Use of a repetitive airgun source, however, shows that it occurs widely in the Pacific Ocean: in the Central basin southwest of the Hawaiian Islands; off the California coast; near the Murray fracture zone at about 155 degrees W; and on the Fiji plateau. Twenty-one crustal columns analyzed to date have sufficient penetration to define deep crustal parameters. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 754 131 8/10 8/7
HAWAII INST OF GEOPHYSICS HONOLULU

Micropaleontology of a Miocene Core from the Western Tropical Pacific, (U)

JAN 70 14P Resig,Johanna M. ;Ling, Hsin-Yi ;Stadum,Carol J. ;
REPT. NO. HIG-Contrib-350
CONTRACT: N00014-70-A-0016-0001
PROJ: NR-083-603

UNCLASSIFIED REPORT
Availability: Pub. in Pacific Science, v24 n4 p421-432 Oct 70.
SUPPLEMENTARY NOTE: Prepared in cooperation with Washington Univ., Seattle. Dept. of Oceanography, Contrib-541.

DESCRIPTORS: (*OCEAN BOTTOM SAMPLING, MARSHALL ISLANDS), (*MICROPALEONTOLOGY, PACIFIC OCEAN), SEDIMENTATION, FORAMINIFERA, PLANKTON, GEOLOGIC AGE DETERMINATION, RADIOLARIA (U)

A little-disturbed sediment core taken at a location south of Kwajalein Island in the western tropical Pacific was found to consist of thin Quaternary deposits overlying Miocene with well-preserved radiolarian assemblages. At the sampled site, a northeast-southwest reflection profile revealed that the older strata were uplifted along what probably is a normal fault. (Author) (U)

AD- 753 995 8/10 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Bathymetry, Magnetic Anomalies, and Plate Tectonic History of the Mouth of the Gulf of California, (U)

JUN 72 17P Larson,Roger L. ;
REPT. NO. LDGO-1844
CONTRACT: N00014-67-A-0108-0004
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Geological Society of America, Bulletin, v83 p3345-3359 Nov 72.
SUPPLEMENTARY NOTE: Revision of report dated 7 Feb 72.

DESCRIPTORS: (*MARINE GEOPHYSICS, GULFS), (*STRUCTURAL GEOLOGY, PACIFIC OCEAN), GEOMAGNETISM, ANOMALIES, DEPTH FINDING, FAULTS(GEOLOGY), GEOLOGIC AGE DETERMINATION, OCEAN BOTTOM TOPOGRAPHY, MEXICO (U)
IDENTIFIERS: *MAGNETIC ANOMALIES, OCEAN BOTTOM SPREADING, OCEANIC CRUST, *BATHYMETRY, *CALIFORNIA GULF, *PLATE TECTONICS (U)

Bathymetric and magnetic anomaly profiles show that the East Pacific Rise crest and both the Tamayo and Rivera Fracture Zones presently define the boundary of the Pacific and North American plates at the mouth of the Gulf of California. New oceanic crust is forming at the rise crest and transform fault slip is occurring along the fracture zones at the rate of 6.0 cm/yr. For the past 2 million years, a coherent pattern of spreading has been recorded north of the Tamayo Fracture Zone. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 753 992 8/10 8/7
RHODE ISLAND UNIV KINGSTON GRADUATE SCHOOL OF OCEANOGRAPHY

Diapirlike Features Offshore Honduras: Implications Regarding Tectonic Evolution of Cayman Trough and Central America, (U)

DEC 72 15P Pinet,Paul R. ;
REPT. NO. Ref-72-13
CONTRACT: N00014-68-A-0215-0003

UNCLASSIFIED REPORT
Availability: Pub. in Geological Society of America Bulletin, v83 p1911-1922 Jul 72.

DESCRIPTORS: (*OCEAN BOTTOM TOPOGRAPHY, CARIBBEAN SEA), SALTS, REFLECTION, DEPOSITS, LITHOSPHERE, MOTION, FAULTS(GEOLOGY), STRUCTURAL GEOLOGY, MAGNETIC FIELDS, MEXICO GULF, HONDURAS, MARINE GEOLOGY, CENTRAL AMERICA, ECHO RANGING, CONTINENTAL SHELVES (U)
IDENTIFIERS: CAYMAN TROUGH, PLATE TECTONICS, SEISMIC REFLECTION METHOD (U)

A seismic-reflection survey along the continental margin of Honduras has uncovered an assemblage of diapirlike bodies. Features such as disrupted and upturned flank reflectors as well as a domed and faulted overburden suggest that the bodies are truly piercement structures. Although unequivocal evidence is lacking, the diapirs are probably salt. The Cayman Trough is a locus of intense tectonism along which the Caribbean plate is considered to be decoupled from the North America plate. Salt offshore Honduras (Caribbean plate) may have been displaced eastward by about 1,000 km relative to presumably equivalent salt deposits in Guatemala (North America plate). Hence, slip rates for the lithospheric plates in the northwestern Caribbean can be estimated to lie between 1 and 2 cm/yr, depending on whether the transcurrent motions were initiated in the mid-Mesozoic or the mid-Cenozoic. (Author) (U)

AD- 753 886 8/3 8/10
TEXAS A AND M UNIV COLLEGE STATION DEPT OF OCEANOGRAPHY

Winter Circulation Patterns and Property Distributions, (U)

71 47P Nowlin,Worth D. , Jr;
REPT. NO. Contrib-509-Ch-1
CONTRACT: Nonr-2119(04), N00014-68-A-0308-0002

UNCLASSIFIED REPORT
Availability: Pub. in Oceanographic Studies, v2 ch1 p3-51 Jul 71.

DESCRIPTORS: (*OCEAN CURRENTS, *MEXICO GULF), TEMPERATURE, SALINITY, BATHYTHERMOGRAPH DATA (U)
IDENTIFIERS: WINTER (U)

Based on their characteristic properties, the water masses of the Gulf of Mexico and their vertical stratification are discussed. The T-S relationships specific to the region are presented. Variations in the characteristics of the water in the following layers are shown, and the likely origins of these water masses are identified: North Atlantic Deep Water, Subantarctic Intermediate Water, oxygen minimum layer and Subtropical Underwater. For the winter season, the property distributions in the mixed surface layers are described. On the basis of dynamic computations and GEK measurements, the general winter circulation patterns within the Gulf are examined. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 753 885 8/3
TEXAS A AND M UNIV COLLEGE STATION DEPT OF OCEANOGRAPHY

Experimental Circulation Modeling within the Gulf and the Caribbean, (U)

71 14P Ichiye,Takashi ;
REPT. NO. Contrib-509-Ch-12
CONTRACT: Nonr-2119(04), N00014-68-A-0308-0002

UNCLASSIFIED REPORT
Availability: Pub. in Oceanographic Studies, v2 ch12 p213-226 Jul 71.

DESCRIPTORS: (*OCEAN CURRENTS, *MEXICO GULF), (*CARIBBEAN SEA, OCEAN CURRENTS), OCEAN MODELS, FLUID FLOW, INTERACTIONS, TRANSPORT PROPERTIES, WIND, VELOCITY, OCEAN BOTTOM TOPOGRAPHY, COASTAL REGIONS (U)

Experiments were carried out with scale models of the Gulf of Mexico and Caribbean Sea in a circular plexiglass tank. The driving force for the Gulf was the inflow and outflow system maintained with a reservoir or a circulating pump. The driving force for the Caribbean model was wind. Results are discussed. (U)

AD- 753 884 8/3
TEXAS A AND M UNIV COLLEGE STATION DEPT OF OCEANOGRAPHY

Contrasting Summer Circulation Patterns for the Eastern Gulf, (U)

71 19P Nowlin,W. D. , Jr.; Hubertz,J. M. ;
REPT. NO. Contrib-509-Ch-6
CONTRACT: Nonr-211 (04), N00014-68-A-0308-0002

UNCLASSIFIED REPORT
Availability: Pub. in Oceanographic Studies, v2 ch6 p119-137 Jul 71.

DESCRIPTORS: (*OCEAN CURRENTS, *MEXICO GULF), SALINITY, TRANSPORT PROPERTIES, INTERACTIONS, VELOCITY, OCEANOGRAPHIC DATA, HYDROGRAPHIC SURVEYING, GEK DATA (U)
IDENTIFIERS: SUMMER (U)

The results of two oceanographic surveys of the eastern Gulf of Mexico in June, 1966, and June, 1967, illustrate two contrasting summer circulation patterns of the area and provide the first detailed description of an anticyclonic ring detached from the Loop Current. Water not bounded by these circulations has lesser salinity values at the salinity maximum than the Caribbean water and appears to be formed from the Caribbean mass by bertical mixing along the western edge of the Yacatan Current and over the Campeche Bank. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 753 792 8/10 8/14
SCRIPPS INSTITUTION OF OCEANOGRAPHY SAN DIEGO CALIF MARINE PHYSICAL LAB

Magnetic Upward Continuation from an Uneven Track. (U)

DESCRIPTIVE NOTE: Summary rept.,
JAN 72 10P Parker,Robert L. ;Klitgord, Kim D. ;
REPT. NO. MPL-U-75/71
CONTRACT: N00014-69-A-0200-6002
PROJ: NR-260-103

UNCLASSIFIED REPORT
Availability: Pub. in the Geophysics, v37 n4 p662-668 Aug 72.

DESCRIPTORS: (*OCEAN BOTTOM, GEOMAGNETISM), MAGNETIC ANOMALY DETECTION, MAPPING(TRANSFORMATIONS), PACIFIC OCEAN (U)

A new method for continuing two-dimensional potential data upward from an uneven track is developed with special emphasis on solving a particular practical problem, that of magnetic data taken near the bottom of the ocean. The method is based on the use of the Schwarz-Christoffel transformation, which maps the original, irregular track into a horizontal straight line. It has been found to be very fast computationally and to suffer none of the restrictions found in some earlier two-dimensional algorithms. (Author) (U)

AD- 753 453 8/10 8/3
MASSACHUSETTS INST OF TECH CAMBRIDGE

Steady Flow Past an Island with Applications to Bermuda. (U)

DESCRIPTIVE NOTE: Doctoral thesis,
OCT 71 27P Hogg,Nelson G. ;
CONTRACT: Nonr-1841(74), Nonr-3963(31)

UNCLASSIFIED REPORT
Availability: Pub. in Geophysical Fluid Dynamics, v4 p55-81 1972.
SUPPLEMENTARY NOTE: Prepared in cooperation with Woods Hole Oceanographic Institution, Mass. Grant NSF-GJ-133.

DESCRIPTORS: (*OCEANOGRAPHIC DATA, ATLANTIC OCEAN), (*OCEAN CURRENTS, BERMUDA), ANOMALIES, TEMPERATURE, SALINITY, MATHEMATICAL MODELS, THERMOCLINES, THESES, NAVAL RESEARCH (U)
IDENTIFIERS: ISOTHERMS, STRATIFICATION (U)

Temperature and salinity data from the vicinity of Bermuda reveal large vertical displacements of the isopycnals of over 100 m close to the island. A model based on the steady flow of an inviscid, stratified ocean past a circularily symmetric island on a rotating plane gives good qualitative agreement. The effects of island slope and nonlinearities are accounted for in a perturbation procedure. In an anomalous area over the left slope of the island (looking downstream) large steps were observed in the temperature and salinity profiles. The theoretical flow is shown to have a minimum Richardson number in this region. In a quasi-empirical manner it is possible to compute a Richardson number profile from the observed density data. This procedure gives values very close to that needed for instability to be possible suggesting that instabilities promote mixing and the development of the observed layers. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 753 450 8/10 8/3
MASSACHUSETTS INST OF TECH CAMBRIDGE DEPT OF EARTH AND PLANETARY SCIENCES

Temperature Microstructure on the Bermuda Slope with Application to the Mean Flow, (U)

APR 72 18P Wunsch,Carl ;
CONTRACT: N00014-67-A-0204-0048

UNCLASSIFIED REPORT
Availability: Pub. in Tellus, v24 n4 p350-367 1972.
SUPPLEMENTARY NOTE: Prepared in cooperation with Woods Hole Oceanographic Institution, Mass., (Rept., no. WHOI-Contrib-2719). Revision of report dated 3 Jan 72.

DESCRIPTORS: (*ATLANTIC OCEAN, TEMPERATURE), (*OCEAN CURRENTS, BERMUDA), OCEANOGRAPHIC DATA, HYDROGRAPHIC SURVEYING, DROGUE PARACHUTES, FLOWMETERS, INTERACTIONS, THERMOCLINES, ISLANDS (U)

The oceanic conditions in the immediate vicinity of Bermuda have been studied with hydrographic data, parachute drogues, and moored current meters. The island was found to be a source of temperature and salinity microstructure with a marked azimuthal asymmetry. On one cruise, the area of most intense mixing was associated with a very strong jet across the north shore of Bermuda. The jet is depicted by the very marked deepening of the isotherms of the main thermocline as the island is approached from the north. Overall, the mean flow pattern has been determined. Very near-shore very violent time dependent motions were observed which may be associated with the step structure on the T and S curves. (Author) (U)

AD- 753 442 8/10
SACLANT ASW RESEARCH CENTRE LA SPEZIA (ITALY)

MILOCMED 1968: A Drogue Experiment in the Ionian Sea. Part I. The Temperature Time Series. (U)

DESCRIPTIVE NOTE: Technical memo., OCT 72 45P Dahme,Adolf ;de Haen,Andre ;
REPT. NO. SACLANTCEN-TM-181

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: NATO furnished.

DESCRIPTORS: (*THERMOCLINES, *MEDITERRANEAN SEA), TEMPERATURE, HYDROGRAPHIC SURVEYING, DATA PROCESSING, HEATING, THERMISTORS, TIME SERIES ANALYSIS, MEASUREMENT, RECORDING SYSTEMS, ITALY (U)
IDENTIFIERS: *IONIAN SEA, DROGUES (U)

During an oceanographic survey made in the Ionian Sea between 15 May and 5 June 1968, temperature profiles were obtained every three minutes by means of free-drifting, self-recording drogues equipped with 60 m long thermistor chains. The gathering and processing of two of these time series, one covering a period of 17 days and one a period of 4 days, are described. The results reported include an indication of an oceanographic front in the area that causes sharp horizontal changes in the temperature structure both above and below the thermocline. (Author) (U)

AD- 753 406 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Magnetic Anomalies on the Reykjanes Ridge. (U)

DESCRIPTIVE NOTE: Journal article, MAY 72 9P Herron,Ellen M. ;Talwani, Manik ;
REPT. NO. LDGO-1839
CONTRACT: N00014-67-A-0108-0004
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Nature, v238 n5364 p390-392, 18 Aug 72.

DESCRIPTORS: (*OCEAN BOTTOM TOPOGRAPHY, MAGNETIC ANOMALY DETECTION), STRUCTURAL GEOLOGY, GEOMAGNETISM, MAGNETIC FIELDS, ANOMALIES, ATLANTIC OCEAN (U)
IDENTIFIERS: REYKJANES RIDGE, SEA FLOOR SPREADING (U)

New marine and previously published aeromagnetic data across the Reykjanes Ridge outline a pattern of relatively constant spreading rates for the last 47.5 m.y. The anomaly pattern is surpriseingly well developed and can be identified with some confidence, in marked contrast to the poor quality of anomalies found south of 52 degrees N in the Atlantic. Because the Reykjanes and the Mid-Atlantic Ridges have defined the North American-Eurasian Plate boundary during this period, the spreading rate pattern observed on the Reykjanes Ridge can be used as a control on anomaly identifications in the North Atlantic. In particular, the Reykjanes Ridge data provide support for the Williams and McKenzie (1971) spreading pattern, and do not support the model of Pitman, et al., (1971) which demands a near hiatus in the spreading between anomalies 5 and 13. (Author) (U)

AD- 753 303 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

The Levantine Intermediate Water between the Strait of Sicily and the Strait of Gibraltar. (U)

DESCRIPTIVE NOTE: Technical rept., MAR 72 15P Katz,Eli Joel ;
REPT. NO. WHOI-72-85, WHOI-Contrib-2793
CONTRACT: N00014-70-C-0205
PROJ: NR-265-103

UNCLASSIFIED REPORT
Availability: Pub. in Deep-Sea Research, v19 p507-520 1972.
SUPPLEMENTARY NOTE: Revision of report dated 14 Jan 72.

DESCRIPTORS: (*MEDITERRANEAN SEA, SALINITY), GIBRALTAR STRAIT, SICILY, SEA WATER, FLUID FLOW, TEMPERATURE INVERSION, DEPTH FINDING, HYDROGRAPHIC SURVEYING, NAVAL RESEARCH (U)
IDENTIFIERS: Most Project-2 (U)

An STD section between the Straits of Sicily and Gibraltar, supplemented by other hydrographic observations, is used to review and expand upon the available descriptions of the flow of the Levantine Intermediate Water. The topographic constraints downstream of the Strait of Sicily are discussed. Southwest of Sardinia, where bifurcation of the flow is generally thought to occur, 250 meters of the most saline layer is recorded as it turns (north) out of the section. The continuation of the deeper intermediate water along the North African coast is questioned. Finally, the diminution of core salinity before entering the Alboran Sea is related to an observed influx of very cold water from the north. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 753 298 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

A Benthic Front in the South Pacific, (U)

JUN 72 18P Craig,H. ;Chung,Y. ; Fiadeiro,M. ;
CONTRACT: N00014-69-A-0200-6006

UNCLASSIFIED REPORT
Availability: Pub. in Earth and Planetary Science Letters, v16 p50-65 1972.

DESCRIPTORS: (*PACIFIC OCEAN, *DEEP WATER), (*OCEANOGRAPHIC DATA, PACIFIC OCEAN), OCEAN BOTTOM, DEPTH FINDING, OCEAN CURRENTS, HYDROGRAPHIC SURVEYING, TEMPERATURE, SALINITY, ECHO RANGING, SILICATES, OXYGE (U)
IDENTIFIERS: BATHYMETRY, SOUTH PACIFIC OCEAN (U)

East of New Zealand and the Chatham Rise a deep western boundary current separates from the eastward Circumpolar Current and swings north into the South Pacific. These two great currents form the dynamic boundaries of a 10,000,000 sq km triangular discontinuity surface - the benthic front - which separates the South Pacific Deep and Bottom Water. The frontal surface begins at a depth of 2 km at the Chatham Rise, strikes NW and dips 0.023 degrees to the NW with a mean slope of 0.0004. The NE edge is 3.5 km deep and is pinned to the northwest-trending 5 km bathymetric contour by topographic control of bottom water flow. The authors have made continuous STD soundings to 4500m in several sections across the Tonga trench, in order to verify the indications from hydrographic casts that density, temperature, and salinity discontinuities occur across the front. (Author) (U)

AD- 753 271 8/3
WASHINGTON UNIV SEATTLE

Greenland Sea Currents. (U)

DESCRIPTIVE NOTE: Technical rept. 1 Jun 71-31 May 73,
DEC 72 9P Aagaard,Knut ;
CONTRACT: N00014-67-A-0103-0023, ARPA Order-1783
PROJ: NR-307-342

UNCLASSIFIED REPORT

DESCRIPTORS: (*GREENLAND SEA, *OCEAN CURRENTS), HEAT TRANSFER, TRANSPORT PROPERTIES, TEMPERATURE, SALINITY, WIND, NUMERICAL ANALYSIS, THERMOCLINES, DENSITY, PRESSURE, ARCTIC REGIONS (U)

The Greenland Sea holds a position of unique importance and interest among all the Arctic seas. The single most important line of investigation to further our environmental understanding of the area is direct current measurements along the Greenland-Spitsbergen passage, through which the exchange with the Arctic Ocean occurs. Eventually the current measurements must extend throughout the year for flow observations in the East Greenland Current wind stress calculations, and analytical work on the thermohaline circulation, all imply substantial seasonal differences in the circulation. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 753 216 4/2
NAVAL WEATHER SERVICE COMMAND WASHINGTON D C

Summary of Synoptic Meteorological Observations. Japanese and Korean Coastal Marine Areas. Volume 4. Area 10 - Okinawa. Area 11 - Sakishima Islands. Area 12 - Southern East China Sea. (U)

DEC 72 483P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 5, AD-743 488.

DESCRIPTORS: (*MARINE METEOROLOGY, COASTAL REGIONS), (*EAST CHINA SEA, METEOROLOGICAL PHENOMENA), WIND, VELOCITY, CEILING, VISIBILITY, RAINFALL, ATMOSPHERIC TEMPERATURE, LIGHTNING, ATMOSPHERIC PRECIPITATION, BAROMETRIC PRESSURE, FOG, CLOUD COVER, DUST, HAIL (U)
IDENTIFIERS: RYUKYU ISLANDS, AIR WATER INTERACTIONS, SYNOPTIC METEOROLOGY (U)

The data contained in these tables were obtained from Tape Data Family 11 (TDF-11) Marine Surface Observations. TDF-11 was primarily funded by the Naval Weather Service Command and selected by NWSED Asheville as the most comprehensive collection of marine surface observations from which to develop a series of Coastal Marine Summaries. (Author) (U)

AD- 752 892 8/3
PACIFIC MISSILE RANGE POINT MUGU CALIF

Tidal and Lunar Data for Point Mugu, San Nicholas Island, and the Barking Sands Area during 1973. (U)

DESCRIPTIVE NOTE: Technical pub.,
NOV 72 60P Violini,Robert de ;
REPT. NO. PMR-TP-72-7

UNCLASSIFIED REPORT

DESCRIPTORS: (*TIDES, PACIFIC OCEAN), TABLES(DATA), DIURNAL VARIATIONS, EPHEMERIDES, MOON, CALIFORNIA, HAWAII (U)
IDENTIFIERS: POINT MUGU, SAN NICOLAS ISLAND (U)

Basic lunar and tidal data for Point Mugu, San Nicolas Island, and the Barking Sands area during 1973 are provided. The data presented are (1) tidal data; (2) times of moonrise and moonset; and (3) times of lunar phases. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 752 844 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Space Scales of Sea-Surface Temperature Patterns and Their Causes, (U)

OCT 71 9P Namias,Jerome ;
CONTRACT: N00014-69-A-0200-6006

UNCLASSIFIED REPORT
Availability: Pub. in Fishery Bulletin, v70 n3 p611-617 1972.

DESCRIPTORS: (*PACIFIC OCEAN, SURFACE TEMPERATURE), ANOMALIES, HEAT TRANSFER, TROPOSPHERE, CORRELATION TECHNIQUES, OCEAN WAVES, INTERACTIONS, ATMOSPHERIC MOTION, NAVAL RESEARCH (U)
IDENTIFIERS: WESTERLIES, NORTH PACIFIC OCEAN, AIR WATER INTERACTIONS (U)

The space scales of monthly mean sea-surface-temperature (SST) anomalies over the North Pacific are determined from data gathered over a 20-year period and analyzed with the help of correlation fields. The characteristic scales are ascribed to complex coupling between the atmosphere and ocean-specifically to long waves in the upper westerlies and latitudinal variations in the westerlies, both of which produce anomalous oceanic advection and heat exchange. The coherence of mid-tropospheric (700-mb) heights, the cross-correlations between these and SST values, plus atmospheric 'teleconnections' (long distance relationships) implicit in these upper-level flow patterns reveal the character of coupling. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 752 840 8/10 20/1
MAKAI RANGE INC WAIMANALO HAWAII

AP-5 Cruise. (U)

DESCRIPTIVE NOTE: Operations final rept.
DEC 72 64P
CONTRACT: N00014-72-C-0489

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with Hawaii Inst. of Geophysics, Honolulu.

DESCRIPTORS: (*OCEANOGRAPHIC DATA, PACIFIC OCEAN), (*UNDERWATER SOUND, *PACIFIC OCEAN), DEPTH FINDING, TEMPERATURE, DEEP WATER, SALINITY, OCEAN BOTTOM, HYDROGRAPHIC SURVEYING, MAGNETOMETERS, GRAVITY, FLOWMETERS, OCEAN CURRENTS, UNDERWATER SOUND EQUIPMENT, HAWAII, GEOMAGNETISM (U)
IDENTIFIERS: BATHYMETRY (U)

A detailed environmental survey of a specified area in the Pacific Ocean, northeast of Hawaii, was conducted on the R/V KANA KEOKI in September and October of 1972. The primary objective of this survey was to locate a North-South track, for a future acoustic experiment, that can be accurately represented in existing acoustic propagation models. Additional objectives included the collection of detailed bathymetric surveys of two 20 by 30 mile areas, XBT data to define the sound speed structure in the upper 2500 feet of the water column, and deep ocean casts to the bottom to define the deep water sound velocity, temperature, and salinity structures. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 752 494 8/10
NAVAL OCEANOGRAPHIC OFFICE WASHINGTON D C

Environmental-Acoustics Atlas of the Caribbean Sea and Gulf of Mexico. Volume II. Marine Environment. (U)

DESCRIPTIVE NOTE: Special publication.
AUG 72 254P
REPT. NO. NOO-SP-189-Vol-2
PROJ: NOO-714-GT

UNCLASSIFIED REPORT

DESCRIPTORS: (*CARIBBEAN SEA, OCEANOGRAPHIC DATA), (*MEXICO GULF, OCEANOGRAPHIC DATA), (*UNDERWATER SOUND, OCEANOGRAPHIC DATA), GEOMAGNETISM, MAGNETIC DETECTORS, VELOCITY, THERMOCLINES, ECHO RANGING, SALINITY, DEPTH FINDING, OCEAN BOTTOM, OCEAN WAVES, OCEAN CURRENTS, WIND, OXYGEN, MAPS (U)
IDENTIFIERS: ACOUSTIC VELOCITY, BATHYMETRY (U)

The atlas, consisting of two volumes and a separately bound appendix, summarizes available acoustic and environmental data in the Caribbean Sea, Gulf of Mexico and in their Atlantic Ocean approaches between 10 degrees N and 30 degrees N and west of approximately 56 degrees W. This volume includes data on geomagnetic background, subbottom structures, wind, waves, rainfall, and currents. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 752 268 8/10
NAVAL RESEARCH LAB WASHINGTON D C

Sediments of the Norwegian Sea (Donnye Otlozheniya Norvezhskogo Morya), (U)

NOV 72 16P Gorshkova,T. I. ;
REPT. NO. NRL-Trans-1258

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. of Geofizika i Astronomiya: Informatisionnyi Byulleten (USSR) n13 p212-224 1965, by Richard S. Relac and Norman Z. Cherkis.

DESCRIPTORS: (*NORWEGIAN SEA, SEDIMENTATION), OCEAN CURRENTS, OCEAN BOTTOM TOPOGRAPHY, PARTICLE SIZE, SAND, SILT, MUD, FORAMINIFERA, OCEAN BOTTOM SAMPLING, CARBONATES, DEEP WATER, CHEMICAL PROPERTIES, USSR (U)
IDENTIFIERS: BATHYMETRY, TRANSLATIONS (U)

The study investigated the upper layer of sediments. Our study of the vertical cores is presently unfinished, but that tne data analysis indicates that the sediments differ markedly from top to bottom in their physical composition, color, manganese and iron content, and primarily in carbonate content, the latter being governed by the presence of calcareous planktonic foraminifera. All of these facts attest to the variation in climatic conditions during the Quaternary period in the Norwegian Sea. As the bottom topography changed, the connection with the Atlantic Ocean gradually decreased, which resulted in a strengthening or weakening of the influx of Atlantic waters into the Norway-Greenland and Arctic Basin. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 752 267 8/3
NAVAL RESEARCH LAB WASHINGTON D C

On the Question of Current Dynamics in the Norwegian and Greenland Seas (K Voprosu o Dinamike Techenii v Norvezhskom i Grenlandskom Moryakh), (U)

NOV 72 16P Penin,V. V. ;
REPT. NO. NRL-Trans-1257

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. of Materialy Rybokhozyaistvennykh Issledovanii Severnogo Basseina (USSR) v5 p80-90 1965, by Richard S. Relac.

DESCRIPTORS: (*OCEAN CURRENTS, *NORWEGIAN SEA), (*GREENLAND SEA, OCEAN CURRENTS), OCEAN BOTTOM TOPOGRAPHY, VELOCITY, PERIODIC VARIATIONS, TEMPERATURE, TABLES(DATA), USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

The report describes the structure and stability of the current system in the Norwegian and Greenland Seas, and Advection of heat by the Norway current and its branches on profiles on 63 degrees N to 71 degrees N. (U)

AD- 751 972 8/3
SACLANT ASW RESEARCH CENTRE LA SPEZIA (ITALY)

MILOCMED 1968: A Drogue Experiment in the Ionian Sea. Part II. A Study of a Large-Scale Diffusion. (U)

DESCRIPTIVE NOTE: Technical memo., OCT 72 38P Molcard,Robert ;
REPT. NO. SACLANTCEN-TM-182

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN CURRENTS, MEDITERRANEAN SEA), TRANSPORT PROPERTIES, WIND, CORRELATION TECHNIQUES, NUMERICAL METHODS AND PROCEDURES (U)
IDENTIFIERS: AIR WATER INTERACTIONS, *IONIAN SEA (U)

In May 1968, east of Malta, six surface floats (drogues) were tracked for a month and their positions recorded every half hour in an attempt to study oceanic diffusion processes. An analysis of these data is based on the statistical characteristics of distances between pairs of floats. Richardson's neighbour-diffusion theory leads to a diffusion equation generally used for this kind of experiment. The analysis consists in calculating a neighbour diffusivity analogous to the turbulent diffusion coefficient. The diffusion equation proposed by Richardson appears to be a special case of the Kolmogorov equation. Out to a certain range results are in good agreement with previous studies, showing the well known '4/3 law'. Beyond this range, however, the neighbour diffusivity becomes nearly constant. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 751 830 8/3
RAND CORP SANTA MONICA CALIF

Comments on a Paper on Stratified Ocean Circulations, (U)

JUL 72 5P Alexander,R. C. ;
REPT. NO. P-4873

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN CURRENTS, THEORY), SURFACE TEMPERATURE, MATHEMATICAL MODELS, INTERACTIONS, TRANSPORT PROPERTIES, COASTAL REGIONS (U)
IDENTIFIERS: AIR WATER INTERACTIONS, STRATIFICATION, UPWELLING (U)

In a previous paper, Johnson (1971) made a useful contribution to ocean circulation theory by establishing more definitely the role of the thermal structure in the larger context of the theory of wind-driven ocean circulations. The present paper discusses his treatment of the eastern boundary region and his results on coastal upwelling. (U)

UNCLASSIFIED

AD- 751 718 8/1
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Bioluminescence in Sonic-Scattering Layers, (U)

70 11P Boden,Brian P. ;
CONTRACT: N00014-69-A-0200-6006

UNCLASSIFIED REPORT
Availability: Pub. in the Proceedings of an International Symposium on Biological Sound Scattering in the Ocean, Warrenton, Va., 31 Mar-2 Apr 70, p60-68.

DESCRIPTORS: (*LUMINESCENCE, PACIFIC OCEAN), MARINE BIOLOGY, OCEAN BOTTOM, ECHO RANGING, UNDERWATER SOUND, SCATTERING (U)
IDENTIFIERS: BENTHOS, *BIOLUMINESCENCE, DEEP SCATTERING LAYER (U)

Bioluminescent displays in sonic-scattering layers (detected by various types of echo sounders) are discussed. In the first experiment, a single photometer was employed in British Columbia waters. In recent experiments, dual meters have been used to determine spontaneous luminescence. Spontaneous bioluminescence was monitored in the Gulf of California and in the San Diego Trough. The measurements were made simultaneously above, in, and below sonic-scattering layers. Such measurements were also made in the Eastern Atlantic. (Author) (U)

AD- 751 709 8/10 8/7
SCRIPPS INSTITUTION OF OCEANOGRAPHY SAN DIEGO CALIF MARINE PHYSICAL LAB

Topography and Evolution of the East Pacific Rise between 5 deg S and 20 deg S, (U)

FEB 72 11P Anderson ,Roger N. ;Sclater, John G. ;
REPT. NO. MPL-U-26/71
CONTRACT: NSF-GA-29159

UNCLASSIFIED REPORT
Availability: Pub. in Earth and Planetary Science Letters, v14 p433-441 1972.
SUPPLEMENTARY NOTE: Revision of report dated 23 Aug 71.

DESCRIPTORS: (*OCEAN BOTTOM TOPOGRAPHY, *PACIFIC OCEAN), (*MARINE GEOPHYSICS, PACIFIC OCEAN), GEOLOGIC AGE DETERMINATION, FAULTS(GEOLOGY), DEPTH FINDING (U)
IDENTIFIERS: OCEANIC CRUST, BATHYMETRY, *PLATE TECTONICS, SEA FLOOR SPREADING, *EAST PACIFIC RISE (U)

In the absence of convincing magnetic anomaly information, topographic profiles have been used to infer the tectonic history of the East Pacific Rise between 5 degrees S and 20 degrees S. Profiles projected at right angles to the rise crest show a sharp drop in elevation at roughly the same distance on either side of the crest. Profiles to the east of the rise also show a second topography high at 95 degrees W. Comparison of these profiles with empirical depth versus age curves for the North Pacific suggests that this rise, the Galapagos Rise, is the fossil East Pacific Rise which terminated close to 6 mybp by the spreading center jumping 900 km to the west. (Author) (U)

AD- 751 699 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY SAN DIEGO CALIF MARINE PHYSICAL LAB

Eastward-Flowing Bottom Currents along the Clipperton Fracture Zone, (U)

NOV 71 8P Johnson,David A. ;
REPT. NO. MPL-U-57/71
CONTRACT: N00014-69-A-0200-6002, NSF-GA-31377X
PROJ: NR-260-103

UNCLASSIFIED REPORT
Availability: Pub. in Deep-Sea Research, v19 p253-257 1972.
SUPPLEMENTARY NOTE: Revision of report dated 2 Aug 71.

DESCRIPTORS: (*OCEAN CURRENTS, *PACIFIC OCEAN), OCEAN BOTTOM, FLUID FLOW, VELOCITY, FLOWMETERS, DEPTH FINDI(U)
IDENTIFIERS: BATHYMETRY (U)

Bottom currents were measured at four locations within a small area in the equatorial Pacific during a study of ocean floor erosion. The observed current speeds were low (<10 cm/sec) during the period of observation, and exhibited a strong semi-diurnal tidal component. In spite of the fluctuations in speed, the direction of flow at each location (eastward to north-westward) was remarkably uniform. The data suggest that there is a pronounced eastward-flowing bottom current along the north side of the Clipperton Fracture Zone, and that the fracture zone may therefore serve as a major barrier to the abyssal circulation in the central Pacific. This observation is consistent with previous studies of the regional circulation pattern. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 751 698 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY SAN DIEGO CALIF MARINE PHYSICAL LAB

Tertiary Radiolaria and Foraminifera from the Equatorial Pacific, (U)

DEC 71 17P Johnson,David A. ;Parker, Frances L. ;
REPT. NO. MPL-U-56/71
CONTRACT: N00014-69-A-0200-6002, NSF-GB-21259
PROJ: NR-260-103

UNCLASSIFIED REPORT
Availability: Pub. in Micropaleontology, v18 n2 p129-143 Apr 72.
SUPPLEMENTARY NOTE: Sponsored in part by Grants NSF-GA-20014 and NSF-GA-4581. Revision of report dated 2 Aug 71.

DESCRIPTORS: (*OCEAN BOTTOM SAMPLING, SEDIMENTATION), (*SEDIMENTATION, *MICROPALEONTOLOGY), GEOLOGIC AGE DETERMINATION, THICKNESS, FORAMINIFERA, RADIOLARIA, ECHO RANGING, PACIFIC OCEAN (U)
IDENTIFIERS: *SEDIMENT CORES (U)

Forty-six closely spaced sediment cores were obtained from a small region in the equatorial Pacific Ocean near lat. 07 deg. 40 min. N., long. 134 deg. .00 min W. The ages of the cores were determined from the foraminiferal and radiolarian assemblages. Sequences of cores and continuous reflection profiles show that a sharp angular unconformity lies slightly below the sea floor, separating Holocene sediment up to a few centimeters in thickness from a chalk of Tertiary age. This unconformity is a Pleistocene erosion surface which truncates Tertiary sediments ranging in age from Late Eocene (approximately 40 m.y.B.P.) to Middle Miocene (approximately 10m.y.B.P.). A substantial quantity of material, several tens to hundreds of meters in thickness, has been removed by erosion. (Author) (U)

AD- 751 631 8/10 8/7 8/13
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Acoustical and Mass Physical Properties of Deep Ocean Recent Marine Sediments. (U)

DESCRIPTIVE NOTE: Master's thesis,
SEP 72 81P Cepek,Robert Joseph ;

UNCLASSIFIED REPORT

DESCRIPTORS: (*PACIFIC OCEAN, *OCEAN BOTTOM SAMPLING), (*OCEAN BOTTOM, *ACOUSTIC PROPERTIES), DENSITY, POROSITY, ELASTIC PROPERTIES, SHEAR STRESSES, MARINE GEOLOGY, MECHANICAL WAVES (U)
IDENTIFIERS: *OCEAN BOTTOM, *SEDIMENTS, ELASTIC WAVES (U)

Eight cores obtained from the Monterey Submarine Fan in the Pacific Ocean 50 to 75 miles off Monterey, California, were sectioned to conduct vane shear, compressional wave speed, and viscoelastic measurements. After the cores were sectioned aboard ship utilizing a heated element technique, core sections were immediately subjected to vane shear measurements utilizing a Wykeham-Farrance Vane Shear Machine modified to produce a graphical display of torque versus angle of blade rotation. Compressional wave speed measurements were also made aboard ship. Wet density, water content, porosity, and grain size distribution of sediment from core sections were determined later in the laboratory. The relationship of sediment shear strength to mass physical properties and compressional wave speed is discussed. No correlations were apparent between shear strength of the sediment and any single mass physical property or the compressional wave speed of the sediment. A critical discussion of the vane shear test is presented with recommendations for test improvement. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 751 590 8/10 4/2
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Hurricane Heat Potential of the North Atlantic and North Pacific Oceans. (U)

DESCRIPTIVE NOTE: Master's thesis,
SEP 72 107P Heffernan,Richard Francis ;

UNCLASSIFIED REPORT

DESCRIPTORS: (*ATLANTIC OCEAN, SURFACE TEMPERATURE), (*PACIFIC OCEAN, SURFACE TEMPERATURE), (*TROPICAL CYCLONES, POTENTIAL ENERGY), CORRELATION TECHNIQUES, BATHYTHERMOGRAPH DATA, THERMOCLINES, COMPUTER PROGRAMS, THESES, HURRICANE TRACKING (U)
IDENTIFIERS: NORTH PACIFIC OCEAN, NORTH ATLANTIC OCEAN, OCEAN SURFACE (U)

The thesis has two primary objectives, the first is to produce a Monthly Mean Hurricane Heat Potential Atlas based upon bathythermograph data for selected regions in the Tropical Atlantic and Pacific Oceans (this atlas also includes Mean Monthly Sea Surface Temperatures, Mean Monthly Depths of the 26C Isotherm, and Mean Monthly Layer Depths). The second objective is to compute changes in sea surface temperature and in the convective layer depth which would be associated with heat loss from the ocean in a severe tropical storm passage. Upwelling effects upon these quantities has been considered by other authors. (U)

AD- 751 415 4/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

Quantitative Descriptions of the Interaction between the Ocean and Atmosphere for the Atlantic Region, (U)

SEP 72 18P Voitova,K. V. ;Laikhtman, D. L. ;Romanova,N. A. ;Snopkov,V. G. ;
REPT. NO. FTD-MT-24-943-72

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Edited machine trans. of Okeanologiya (USSR) v11 n4 p598-605 1971, by Paul J. Reiff, Jr.

DESCRIPTORS: (*MARINE METEOROLOGY, ATLANTIC OCEAN), HEAT TRANSFER, TURBULENCE, HUMIDITY, BOUNDARY LAYER, ATMOSPHERIC MOTION, TROPICAL REGIONS, USSR (U)
IDENTIFIERS: *AIR WATER INTERACTIONS, TRANSLATIONS (U)

The article describes the small-scale interaction between the ocean and atmosphere - heat flow, vapor, momentum in the layer near the water surface - found by two methods from standard meteorological observations conducted on scientific research vessels. (U)

AD- 751 392 8/3
CALIFORNIA UNIV SAN DIEGO LA JOLLA INST OF GEOPHYSICS AND PLANETARY PHYSICS

Wave Propagation across the Continental Shelf, (U)

DEC 71 20P Miles,John W. ;
CONTRACT: N00014-69-A-0200-6005, NSF-GA-10324

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Fluid Mechanics, v54 pt1 p63-80 1972.

DESCRIPTORS: (*CONTINENTAL SHELVES, *OCEAN WAVES), OCEANOGRAPHY, SEA WATER, EQUATIONS OF MOTION, RESONANCE, FOURIER ANALYSIS, WAVE FUNCTIONS (U)
IDENTIFIERS: *STURM-LIOUVILLE EQUATION, TSUNAMI (U)

Wave propagation across the continental shelf is studied by analogy with transmission-line theory. Fourier transformation along the contours of constant depth, which are assumed parallel to a straight coastline, yields a Sturm-Liouville equation for a prescribed depth profile h(x). The modal spectrum of the profile, which comprises a finite, discrete spectrum of trapped modes and a continuous spectrum of radiated modes, is established. The Green's function for a point source on the coastline is constructed by Fourier superposition over this spectrum. Detailed results are calculated for a two-step model (level shelf separated from level abyss by vertical cliff) and for a gradually sloping shelf that merges smoothly into a level abyss. The radiation impedance of a harbour is calculated, and the effects of the continental shelf on the resonant response of the harbour to a tsunami are discussed. (Author) (U)

AD- 750 975 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Long Ranging Bathymetric Surveying. (U)

DESCRIPTIVE NOTE: Technical rept.,
OCT 72 6P Spindel,Robert C. ;
Heirtzler,James R. ;
REPT. NO. WHOI-72-78, WHOI-Contrib-2853
CONTRACT: N00014-70-C-0205
PROJ: NR-263-103

UNCLASSIFIED REPORT

Availability: Pub. in Jnl. of the Acoustical Society of America, v34 p1936-1956 1962. (Ocean, p554-557 1972).

DESCRIPTORS: (*OCEAN BOTTOM TOPOGRAPHY, *ECHO RANGING), UNDERWATER SOUND, HYDROPHONES, EXPLOSIVE CHARGES, SONAR EQUIPMENT, BAHAMA ISLANDS, DEPTH FINDING, ATLANTIC OCEAN (U)
IDENTIFIERS: *BATHYMETRIC SURVEYS, SCANNING SONAR, SIDE LOOKING SONAR (U)

A long range acoustic side scan echo ranging system has been tested in the region east of the Bahama Islands and the Blake Plateau. The system employs a discrete, linear hydrophone array towed at an approximate depth of 600 m. Deep explosive charges fired at regular intervals serve as sound sources. Reflections were returned from the Bahama and Blake escarpments at ranges up to 370 km and can be correlated with known topographic relief. This ranging system test clearly shows the possibilities of making long range bathymetric surveys. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 750 956 8/1
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

Biological Investigations during the First Voyage of the Scientific-Research Vessel 'Dmitrii Mendeleev' in the Western Section of the Tropical Atlantic, (U)

SEP 72 10P Kovalevskaya,N. V. ;Bekker, V. E. ;Pasternak,F. A. ;
REPT. NO. FTD-HT-23-965-72

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Edited trans. of Zoologicheskii Zhurnal (USSR) v49 n3 p478-479 1970, by R. J. Zeccola.

DESCRIPTORS: (*MARINE BIOLOGY, *ATLANTIC OCEAN), TROPICAL REGIONS, OCEAN CURRENTS, OCEAN BOTTOM, AQUATIC ANIMALS, FISHES, SAMPLING, USSR (U)
IDENTIFIERS: BIOLOGICAL SURVEYS, TRANSLATIONS (U)

The new scientific research ship of The Institute of Oceanology, Academy of Sciences USSR, 'Dmitriy Mendeleyev' left of 21 February 1969 from the port Kaliningrad. The trip lasted 61 days, during which 70 stations were visted covering about 14,900 nautical miles, with one stop at Montserrat and two entries into the port of Spain (Trinidad) and Gibraltar. The main goal of the voyage was to take instrument readings of the eastward current from the ridge of the Lesser Antilles. Concurrently, biological experiments were carried out, including collection of benthic fauna, fish, and ichthyoplankton, as well as several attempts at artificial fertilization of fish roe and incubation in an aquarium. Fish collection produced about 100 different species belonging to 80 genera and 46 families. (Author) (U)

AD- 750 888 8/7 8/10
ROSENSTIEL SCHOOL OF MARINE AND ATMOSPHERIC SCIENCE MIAMI FLA

Rare Earth Element Distributions in Equatorial Mid-Atlantic Ridge Gabbros, (U)

FEB 72 8P Schubert,Carl E. ;
REPT. NO. Contrib-1501
CONTRACT: N00014-67-A-0201-0013

UNCLASSIFIED REPORT
Availability: Pub. in Nature Physical Science, v237 n71 p26-28, 8 May 72.

DESCRIPTORS: (*MARINE GEOLOGY, *ATLANTIC OCEAN), (*IGNEOUS ROCK, *RARE EARTH ELEMENTS), OCEAN BOTTOM TOPOGRAPHY, PETROGRAPHY, OCEAN BOTTOM SAMPLING (U)
IDENTIFIERS: *MIDATLANTIC RIDGE, GABBRO, EARTH CRUST (U)

The crustal sections exposed in the fracture zones of the equatorial Mid-Atlantic Ridge afford the deepest direct sampling of the crust. The gabbros, amphibolites and greenschists underlie basalts and are differentiated along a tholeiitic trend during slow cooling. The variations in the chemistry of the principal elements are greater for the coarse grained rocks than for the basalts as shown on the alkali-iron-magnesium diagram. Oceanic tholeiites are normally considered to have uniform chondrite normalized rare earth element (REE) patterns, charcterized by La depletion, little or no Eu anomaly, and abundances ten to twenty-five times that of chondrites. The conditions leading to the largest variations of the principal elements in the intrusives should also lead to greater REE diversity. (U)

AD- 750 886 4/2
ROSENSTIEL SCHOOL OF MARINE AND ATMOSPHERIC SCIENCE MIAMI FLA

The Large-Scale Movement of Saharan Air Outbreaks over the Northern Equatorial Atlantic, (U)

JUL 71 15P Carlson,Toby N. ;Prospero, Joseph M. ;
REPT. NO. Contrib-1455
CONTRACT: N00014-67-A-0201-0013, Nonr-4008(02)

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Applied Meteorology v11 n2 p283-297 Mar 72.
SUPPLEMENTARY NOTE: Sponsored in part by Grant NSF-GA-25916.

DESCRIPTORS: (*MARINE METEOROLOGY, *ATLANTIC OCEAN), (*AIR MASS ANALYSIS, SAHARAN AFRICA), DESERTS, DUST STORMS, WIND (U)

The authors attempt to show that pulses of warm, dust-laden air from the Sahara are commonly present over the northern equatorial Atlantic Ocean during the summer and early fall. These pulses appear to be generated near the African coast by an interruption in the westward transport of dusty Saharan air caused by the passage of travelling disturbances from equatorial Africa; after the distrubances have passed, the westward flow of dusty air from the interior of the Sahara is resumed. (Author) (U)

AD- 750 864 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Magnetic Lineations of Early Cretaceous Age in the Western Equatorial Pacific Ocean, (U)

MAY 72 7P Larson,Roger L. ;Smith, Stuart M. ;Chase,Clement G. ;
REPT. NO. LDGO-1794
CONTRACT: N00014-67-A-0108-0004
PROJ: NR-083-142

UNCLASSIFIED REPORT

Availability: Pub. in Earth and Planetary Science Letters, v15 p315-319 1972.
SUPPLEMENTARY NOTE: Prepared in cooperation with Scripps Institution of Oceanography, San Diego, La Jolla, Calif. and Minnesota Univ., Minneapolis. Dept. of Geology and Geophysics. Revision of report dated 21 Apr 72.

DESCRIPTORS: (*MARINE GEOPHYSICS, *PACIFIC OCEAN), MAGNETIC ANOMALY DETECTION, GEOMAGNETISM, GEOLOGIC AGE DETERMINATION (U)
IDENTIFIERS: MAGNETIC ANOMALIES (U)

Magnetic anomaly lineations just north of the Phoenix Islands in the western equatorial Pacific trend N 80 degrees E for over 1400 km. They are off-set 180 km left-laterally along an interior fracture zone and truncated to the west by another zone. It is not clear how they are terminated to the east. A Deep Sea Drilling Project hole dates these lineations as about 120 mybp. They represent 20 my or less of history from one flank of an early Cretaceous spreading system. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 750 842 8/3 4/1
TRANSLATION CONSULTANTS LTD ARLINGTON VA

Atlas of Variations in the Ocean-Atmosphere System in the North Atlantic. Issue 6. Seasonal Variations in Tidal Phenomena and Internal Waves, (U)

MAY 72 133P Boris,L. I. ;
CONTRACT: N62306-72-M-1386
MONITOR: NOO Trans-45

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. of mono. Atlas izmenenii Sostoyaniya Sistemy Okean-Atmosfera v Severnoi Atlantike. Vypusk 6. Sezonnye Izmeneniya Prilivnykh Yavlenii , Vnutrennikh Voln, Moscow 1970.

DESCRIPTORS: (*OCEAN WAVES, ATLANTIC OCEAN), PERIODIC VARIATIONS, MICROBAROMETRIC WAVES, TIDES, EQUATIONS OF MOTION, CURVE FITTING, GRAPHICS, MAPS, OCEAN CURRENTS, NUMERICAL ANALYSIS, ATMOSPHERIC MOTION, INTERACTIONS (U)
IDENTIFIERS: NORTH ATLANTIC OCEAN, *AIR WATER INTERACTIONS, SEASONAL VARIATIONS, GRAVITY WAVES, INTERNAL WAVES, TRANSLATIONS (U)

Computations of seasonal variations in internal waves and tidal phenomena in the northern Atlantic Ocean are presented. The calculations are made for tides using Hansen's equations assuming a homogeneous ocean and for internal waves using the method suggested by Fjeldstad. Then variations in vertical density were incorporated in the calculations to provide preliminary information on tidal phenomena in an inhomogeneous ocean. Computations based on a theoretical model were modified and checked using direct observations. Charts show tides and tidal currents for average astronomical conditions based on a homogeneous ocean, characteristic seasonal curves for internal waves, and currents associated with tides and internal waves. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 750 797 8/1 8/3 8/10
NATIONAL INST OF OCEANOGRAPHY WORMLEY (ENGLAND)

National Institute of Oceanography.
Collected Reprints. Volume 19. (U)

71 538P

UNCLASSIFIED REPORT

Availability: Paper copy available from National Institute of Oceanography, Wormley, Godalming, Surrey, England. Price not available.

DESCRIPTORS: (*OCEANOGRAPHIC DATA, REPORTS), MARINE GEOLOGY, MARINE GEOPHYSICS, MARINE BIOLOGY, OCEAN WAVES, CETACEA, PLANKTON, OCEAN CURRENTS, SEDIMENTATION, MARINE BIOLOGICAL NOISE, SEA WATER, SEA ICE, CONTINENTAL SHELVES, SONAR, MARINE ENGINEERING, GREAT BRITAIN (U)

;Contents: Holocene sediments on the continental shelf west of the British Isles; The experimental generation of double Kelvin waves; New computations of the tide-generating potential; Tidal sand movement between some linear sand banks in the North Sea off northeast Norfolk; Conservation of sea mammals and fish; Determination of the density of seawater; Experience with a computer in oceanographic research as sea; Problems of the pack ice zone; The use of oceanography; Waves how high, an analysis of sea conditions; Environmental conditions; The Canadian wave climate study; A measure of species diversity related to the lognormal distribution of individuals among species. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 750 753 8/10 8/3 8/1
SACLANT ASW RESEARCH CENTRE LA SPEZIA (ITALY)

Oceanography of the Strait of Sicily. (U)

DESCRIPTIVE NOTE: Conference proceedings,
SEP 72 244P Allan,Thomas D. ;Akal, Tuncay ;Molcard,Robert ;
REPT. NO. SACLANTCEN-Conf-Proc-7

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Proceedings of a Conference held at SACLANTCEN, La Spezia (Italy) 11-12 Apr 72. Errata sheet inserted. NATO furnished.

DESCRIPTORS: (*OCEANOGRAPHY, *MEDITERRANEAN SEA), SYMPOSIA, OCEAN CURRENTS, TURBULENCE, SALINITY, DEEP WATER, HYDROGRAPHIC SURVEYING, THERMOCLINES, MARINE GEOPHYSICS, MARINE GEOLOGY, GRAVITY, DEPTH FINDING, ECHO RANGING, PLANKTON, AQUATIC ANIMALS, ITALY (U)
IDENTIFIERS: BATHYMETRY, *SICILY STRAIT (U)

;Contents: The Strait of Sicily in relation to the general circulation of the Mediterranean; The hydrological characteristics of the waters exchanged between the eastern and the western basins of the Mediterranean; A study of the turbulent flow and character of the water masses over the Sicilian Ridge in both summer and winter; A summary of oceanographic data obtained in deep water in the Strait of Sicily in May 1970; A contribution to the hydrology of the Strait of Sicily; Preliminary results of current measurements in the Strait of Sicily in May 1970; The structure of fronts in the seasonal thermocline; The general geophysics and geology of the Strait of Sicily; Bathymetry, gravity and magnetism in the Strait of Sicily; The fauna of the Strait of Sicily; A contribution to the study of the surface and deep zooplankton in the Strait of Sicily. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 750 679 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY SAN DIEGO CALIF MARINE PHYSICAL LAB

Preliminary Cruise Report - Iguana Expedition. (U)

DESCRIPTIVE NOTE: Summary rept., OCT 72 35P Shor,George G. , Jr.; Smith,Stuart M. ;
REPT. NO. SIO-Ref-72-76, MPL-U-65/72
CONTRACT: N00014-69-A-0200-6002, NSF-GA-19703
PROJ: NR-260 103

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEANOGRAPHIC DATA, PACIFIC OCEAN), OCEANOGRAPHIC SHIPS, OCEANOGRAPHIC EQUIPMENT, MARINE GEOPHYSICS, OCEAN BOTTOM TOPOGRAPHY, MAGNETOMETERS, BATHYTHERMOGRAPHS (U)
IDENTIFIERS: BATHYMETRY, SEISMIC REFRACTION (U)

A preliminary cruise report of Expedition Iguana, 31 March 1972-11 May 1972, gives some preliminary results, list of equipment and, personnel, stations and data gathered, and track and topographic plots. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 750 288 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Atlas of Monthly Mean Sea Surface and Subsurface Temperature and Depth of the Top of the Thermocline North Pacific Ocean, (U)

MAY 71 99P Robinson,Market K. ;Bauer, Roger A. ;
CONTRACT: N00014-69-A-0200-6006

UNCLASSIFIED REPORT

DESCRIPTORS: (*THERMOCLINES, *PACIFIC OCEAN), BATHYTHERMOGRAPH DATA, SURFACE TEMPERATURE (U)
IDENTIFIERS: *NORTH PACIFIC OCEAN (U)

The interim Atlas of the North Pacific and Adjacent Seas presents monthly charts of temperature for the sea surface and, for the first time, the subsurface levels at 100 ft. increments to 400 ft. The atlas is based, primarily, on bathythermography (BT) data collected at Scripps Institution of Oceanography during the past 29 years from U. S. Navy and Coast Guard ships, and ships of scientific institutions. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 750 037 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Layers of High Thermal Conductivity in the North Atlantic. (U)

DESCRIPTIVE NOTE: Technical rept.,
FEB 72 8P VON Herzen,Richard P. ;
Kasameyer,Paul W. ;Simmons,Gene ;
REPT. NO. WHOI-72-63, WHOI-Contrib-2851
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v77 n17 p3162-3167, 10 Jun 72.
SUPPLEMENTARY NOTE: Prepared in cooperation with Massachusetts Inst. of Tech., Cambridge. Dept. of Earth and Planetary Sciences, Contract Nonr-1841(74). Revision of report dated 1 Jul 71.

DESCRIPTORS: (*OCEAN BOTTOM, THERMAL CONDUCTIVITY), (*ATLANTIC OCEAN, OCEAN BOTTOM), TEMPERATURE, QUARTZ, SAND, THICKNESS, ANOMALIES (U)
IDENTIFIERS: NORTH ATLANTIC OCEAN (U)

Quartz-sand layers in the NW Atlantic basin have thermal conductivity values more than twice as high (up to 4.5 mcal/cm sec degree C) as the values for normal sediment. The layers are thick enough to affect the measured temperature gradients; thus many thermal-conductivity measurements must be made to obtain an accurate heat-flow measurement in this part of the Atlantic. The conductivity of the layers cannot be estimated accurately from the water content of the sediments by using the empirical curve determined by Ratcliffe. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 750 036 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Two Heat Flow Profiles across the Atlantic Ocean. (U)

DESCRIPTIVE NOTE: Technical rept.,
DEC 71 11P VON Herzen,Richard P. ;
Simmons,Gene ;
REPT. NO. WHOI-72-70, WHOI-Contrib-2795
CONTRACT: N00014-66-C-0241, NSF-GA-1077
PROJ: NR-083-004

UNCLASSIFIED REPORT
Availability: Pub. in Earth and Planetary Science Letters, v15 p19-27 1972.
SUPPLEMENTARY NOTE: Prepared in cooperation with Massachusetts Inst. of Tech., Cambridge. Dept. of Earth and Planetary Sciences. Revision of report dated 17 Nov 71.

DESCRIPTORS: (*ATLANTIC OCEAN, OCEAN BOTTOM TOPOGRAPHY), (*OCEAN BOTTOM, HEAT TRANSFER), CORRELATION TECHNIQUES, TEST METHODS, TABLES(DATA), OCEANOGRAPHIC DATA (U)
IDENTIFIERS: MIDATLANTIC RIDGE (U)

Measurements of the terrestrial heat flux at 76 localities along 2 profiles across the Mid-Atlantic Ridge at 19.5 degrees N and 8.5 degrees S latitude are presented. Two high heat-flow values were measured 800 to 1000 km east of the ridge crest at 8.5 degrees S, but no high values were found at the ridge crest at this latitude. Detailed surveys and heat-flow measurements near the ridge crests on both profiles indicate that bottom topography influences the heat-flow variability. The average heat flow on both profiles, about 1.4 to 1.5 x 10 to the minus 6th power cal/sq. cm.-sec, is close to the average for other ocean basins, in contrast to previous studies indicating lower heat flow for the Atlantic. (Author) (U)

AD- 750 029 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Heat Flow, Bathymetry, and the Mid-Atlantic Ridge at 43 N. (U)

DESCRIPTIVE NOTE: Technical rept.,
FEB 72 10P Von Herzen,Richard P. ;
Kasameyer,Paul W. ;Simmons,Gene ;
REPT. NO. WHOI-72-67, WHOI-Contrib-2850
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v77 n14 p2535-2542 1972.
SUPPLEMENTARY NOTE: Prepared in cooperation with Massachusetts Inst. of Tech., Cambridge. Dept. of Earth and Planetary Sciences, Contract Nonr-1831(74). Revision of report dated 1 Jul 71.

DESCRIPTORS: (*ATLANTIC OCEAN, OCEAN BOTTOM TOPOGRAPHY), (*OCEAN BOTTOM, HEAT TRANSFER), MARINE GEOLOGY, TEMPERATURE, THERMAL CONDUCTIVITY (U)
IDENTIFIERS: MID ATLANTIC RIDGE, BATHYMETRY, PLATE TECTONICS, CONTINENTAL DRIFT (U)

A detailed profile of heat-flow values across the mid-Atlantic ridge near 43 degrees N is typical of mid-oceanic ridge areas, except for low values 100-300 km east of the ridge crest. The mid-Atlantic ridge south of 43 degrees N has a heat-flow distribution and bathymetric profile consistent with the hypothesis of rigid-plate tectonics with a spreading rate of less than 1.0 cm/yr for the last 40 m.y. and in conflict with the spreading-rate history deduced from magnetic anomalies. The ridge north of 43 degrees N is abnormally flat, is unusually elevated in a region of low heat flow to the west, and has an abnormally low axial magnetic anomaly. These features cannot be explained by a simple model of rigid-plate motion. (Author) (U)

AD- 750 025 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Geologic Effects of Ocean Bottom Currents: Western North Atlantic. (U)

DESCRIPTIVE NOTE: Technical rept.,
72 36P Hollister,Charles D. ;
Heezen,Bruce C. ;
REPT. NO. WHOI-72-60, WHOI-Contrib-2620
CONTRACT: N00014-66-C-0241
PROJ: NR-083 004

UNCLASSIFIED REPORT
Availability: Pub. in Studies in Physical Oceanography - A Tribute to George Wuest on his 80th Birthday, v2 p37-66 1972.
SUPPLEMENTARY NOTE: Prepared in cooperation with Lamont Doherty Geological Observatory, Palisades, N. Y., Contrib-1765. Sponsored in part by Geological Survey grant GS-12109.

DESCRIPTORS: (*OCEAN CURRENTS, SEDIMENTATION), (*ATLANTIC OCEAN, OCEAN BOTTOM), THICKNESS, SAND, CLAY, SILT, MUD, UNDERWATER PHOTOGRAPHY, ECHO RANGING, OCEAN BOTTOM TOPOGRAPHY, CONTINENTAL SHELVES (U)
IDENTIFIERS: NORTH ATLANTIC OCEAN, *SEDIMENT TRANSPORT (U)

Near-bottom velocities of 10 to 25 cm/sec and higher have been observed beneath the Western Boundary Undercurrent from Greenland to Cape Hatteras. These measured velocities are believed to be competent to transport many of the sediment sizes found on the continental rise and thus it is argued here that transportation and deposition of sediment along the continental slope and continental rise of the Western North Atlantic should be strongly affected by this contour-following deep-sea current. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 750 020 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Characteristics of the Flow of the Kuroshio South of Japan, (U)

72 55P Taft,Bruce A. ;
CONTRACT: N00014-69-A-0200-6006

UNCLASSIFIED REPORT
Availability: Pub. in Kuroshio-Its Physical Aspects, ch6 p165-216 1972.

DESCRIPTORS: (*OCEAN CURRENTS, PACIFIC OCEAN), SURFACE PROPERTIES, GEK DATA, VOLUME, TRANSPORT PROPERTIES, OCEAN BOTTOM TOPOGRAPHY, THERMOCLINES, MEASUREMENT, JAPAN (U)
IDENTIFIERS: *KUROSHIO CURRENT (U)

Primary data for this study are the GEK (geomagnetic electro-kinetograph) surface current measurements. They are used to locate the position of the Kuroshio and to measure its strength. Relative volume transports are computed from the hydrographic data and are used to estimate the change in transport along the current. Time variations in the maximum surface current speed and relative volume transport of the Kuroshio over the period 1956 - 1964 are treated in the final section. In the first section there is a brief discussion of the bottom topography off Japan. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 749 983 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Sea Floor Geothermal Measurements from CONRAD Cruise 13. (U)

DESCRIPTIVE NOTE: Technical rept. Apr-Dec 70,
JUL 72 275P Bookman,Charles A. ;Malone, Isabel E. ;Langseth,Marcus G. , Jr;
CONTRACT: N00014-67-A-0108-0004, NSF-GA-18765

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Sponsored in part by Grant NSF-GA-27281.

DESCRIPTORS: (*OCEAN BOTTOM, THERMAL PROPERTIES), SEA WATER, HEAT FLUX, DEEP WATER, THERMISTORS, OCEAN BOTTOM SAMPLING, PRESSURE GAGES, SEDIMENTATION, DEPTH FINDING, OCEANOGRAPHIC SHIPS, ATLANTIC OCEAN, PACIFIC OCEAN, TABLES(DATA), THERMAL CONDUCTIVITY, TEMPERATURE (U)
IDENTIFIERS: SEDIMENT CORES, GRADIENTS, TEMPERATURE (U)

The report presents geothermal data representing 127 stations in the Atlantic and Pacific Oceans. This material includes deep water and sediment temperatures as well as conductivity measurements from sediment cores. (Author) (U)

AD- 749 931 8/10 8/14
SCRIPPS INSTITUTION OF OCEANOGRAPHY SAN DIEGO CALIF MARINE PHYSICAL LAB

Geomagnetic Time Variations on the Sea Floor off Southern California. (U)

DESCRIPTIVE NOTE: Summary rept.,
AUG 72 240P Greenhouse,John P. ;
REPT. NO. SIO-Ref-72-67, MPL-U-41-71
CONTRACT: N00014-69-A-0200-6002, NSF-GP-425
PROJ: NR-260-103

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Sponsored in part by Grants NSF-GP-2810, NSF-GA-984 and NSF-GA-11350.

DESCRIPTORS: (*OCEAN BOTTOM, ELECTRICAL CONDUCTIVITY), (*PACIFIC OCEAN, STRUCTURAL GEOLOGY), GEOMAGNETISM, TELLURIC CURRENTS, SEDIMENTATION, OCEANOGRAPHIC EQUIPMENT, THESES (U)
IDENTIFIERS: COMPUTER AIDED ANALYSIS, TELLURIC CURRENT EXPLORATION (U)

Data from 12 geomagnetic stations on the sea floor off southern California have been analyzed to infer the structure of electrical conductivity within the oceanic basement. The best fitting conductivity model has a significantly lower conductivity within the basement than that inferred by Cox and others from magnetotelluric measurements. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 749 930 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY SAN DIEGO CALIF MARINE PHYSICAL LAB

Shipboard Cruise Report on Leg Two of Expedition South Tow: Studies in the Southeast Pacific. (U)

DESCRIPTIVE NOTE: Summary rept. 15 Feb-20 Mar 72,
AUG 72 42P Mudie,John D. ;Grow,John A. ;Dlitgord,Kim D. ;Larson,Peggy A. ;
REPT. NO. SIO-Ref-72-66, MPL-U-36/72
CONTRACT: N00014-69-A-0200-6002, NSF-GA-31377X
PROJ: NR-260-103

UNCLASSIFIED REPORT

DESCRIPTORS: (*MARINE GEOPHYSICS, *PACIFIC OCEAN), HYDROGRAPHIC SURVEYING, OCEAN BOTTOM TOPOGRAPHY, SEDIMENTATION, THICKNESS, DEPTH FINDING, MAGNETIC ANOMALY DETECTION (U)
IDENTIFIERS: MAGNETIC ANOMALIES, OCEAN BOTTOM SPREADING, BATHYMETRY, SOUTH PACIFIC OCEAN, THOMAS WASHINGTON VESSEL (U)

The report summarizes Leg 2 of Expedition South Tow, conducted by the R/V THOMAS WASHINGTON from Papeete, Tahiti to Valparaiso, Chile during 15 February - 20 March 1972. Extensive near-bottom geophysical data over the Pacific-Antarctic Rise at 51 degrees S were obtained in order to study the detailed structure of the magnetic time scale between magnetic Anomaly 3 on both sides of the rise crest. Underway bathymetry, magnetic, and navigation plots are included. An excellent surface magnetic profile on the west flank of the Pacific-Antarctic Rise showed Anomalies 1-20 clearly with an abrupt increase in the spreading half-rate from 2.3 cm/yr for anomalies older than Anomaly 5 to 4.8 cm/yr for the younger anomalies. (Author) (U)

AD- 749 709 8/3 20/4
NAVAL ACADEMY ANNAPOLIS MD

Time Dependent Shear Stress Beneath a Shoaling Wave. (U)

DESCRIPTIVE NOTE: Research rept., MAY 72 102P Fisher,John ;
REPT. NO. USNA-TSPR-26

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Report on A Trident Scholar Project.

DESCRIPTORS: (*OCEAN WAVES, BEACHES), HYDRAULIC MODELS, EXPERIMENTAL DESIGN, TEST EQUIPMENT, DETECTORS, SHEAR STRESSES, VELOCITY, COMPUTER PROGRAMS (U)
IDENTIFIERS: TRIDENT SCHOLAR PROJECT (U)

The celerity of a shoaling wave was measured and plotted as a function of the parameter d/L(o) and compared to linear wave theory. A noticeably higher celerity was measured in the free stream than was measured by hot film shear sensors in the boundary layer. Hot film shear sensors were also used to determine the phase relationship between shear stress and free stream particle velocity. Data results indicate that the maximum shear stress in an oscillatory flow field leads the maximum particle velocity by approximately 30 degrees - 35 degrees and that this has increased with distance from the bottom. The phase difference was also found to be dependent upon the length of the incident wave. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 749 706 8/3 8/10
NAVAL UNDERWATER SYSTEMS CENTER NEW LONDON CONN NEW LONDON LAB

Current Regime of the MALTESE Oceanic Frontal Zone. (U)

DESCRIPTIVE NOTE: Technical rept., SEP 72 35P Miller,Ralph R. , III;
REPT. NO. NUSC-TR-4381
PROJ: NUSC-A-650-15
TASK: R-2408

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN CURRENTS, *MEDITERRANEAN SEA), THERMOCLINES, BATHYTHERMOGRAPH DATA, SALINITY, TEMPERATURE, MEDITERRANEAN SEA ISLANDS, GRAPHICS (U)
IDENTIFIERS: MALTA, *OCEANIC FRONTS (U)

The Maltese oceanic frontal zone lies due east of Malta in the Mediterranean in the region surrounding 36 degrees N, 17 degrees E. The report presents an analysis of 48 expendable bathythermograph (XBT) traces from the Maltese frontal zone taken between 18 and 24 November 1971 (IOMED 71). Surface water moving eastward through the Africa-Malta straits and warmed to more than 20.0C formed a distinct water mass above the thermocline in the study area. Mixing of this water with Ionian Surface Water formed complex frontal zones. These zones were collectively identified as the Maltese oceanic frontal zone, which was easily traced with thermal probes. The density of this surface water was increased by evaporation and by colling in the Levantine Basin east of the study area, whereupon this water sank to an equal density level below the thermocline. This Levantine Intermediate Water (LIW) then flowed westward through the study area in the form of large masses of 14.5C water, between 60 and 850 m, toward an eventual outlet in the Malta-Sicily straits. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 749 418 8/3 4/1
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Negative Oceanic Heat Flux as a Cause of Water-Mass Formation. (U)

DESCRIPTIVE NOTE: Technical rept.,
MAR 72 9P Worthington,L. V. ;
REPT. NO. WHOI-72-61, WHOI-Contrib-2788
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Physical Oceanography, v2 n3 p205-211 Jul 72.
SUPPLEMENTARY NOTE: Presented at the Conference on the Interaction of the Sea and the Atmosphere, 1-3 Dec 71, Ft. Lauderdale, Fla. Revision of report dated 14 Jan 72.

DESCRIPTORS: (*SEA WATER, HEAT TRANSFER), (*NORWEGIAN SEA, HEAT TRANSFER), OCEAN CURRENTS, ATLANTIC OCEAN (U)
IDENTIFIERS: NORTH ATLANTIC OCEAN, AIR WATER INTERACTIONS (U)

Regions of large (>60 kcal/sq cm/yr) net annual heat flux from the oceans to the atmosphere are found only on the western sides of Northern Hemisphere oceans and in the Norwegian Sea, according to Budyko. It has been assumed that these negative heat fluxes are the result of the transport of warm water to middle and high latitudes by major ocean currents, specifically the Gulf Stream, the North Atlantic Current and the Kuroshio. In the case of the Norwegian Sea, Worthington suggested a mechanism for maintaining the negative heat flux, whereby warm surface water is advected northward to replace the dense, deep water formed within that sea by the cooling action of the atmosphere. The deep water mass so formed overflows the sills of the Norwegian Sea and moves southward into the depths of the Atlantic. It is postulated (1) that this mechanism maintains the negative heat fluxes found at mid-latitudes on the northwestern sides of the oceans, and (2) that water masses are also formed at these latitudes; they are intermediate rather than deep water masses. The water-mass producing agent in these northwestern regions of the oceans is polar continental air which breaks out over the sea surface at relatively low latitudes during northern winter. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 749 417 8/10
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Structure and Stratigraphy of China Basin. (U)

DESCRIPTIVE NOTE: Technical rept.,
NOV 71 23P Emery,K. O. ;Ben-Avraham, Zvi ;
REPT. NO. WHOI-72-57, WHOI-Contrib-2218
CONTRACT: N00014-66-C-0241, NSF-GA-27449
PROJ: NR-083-004

UNCLASSIFIED REPORT
Availability: Pub. in American Association of Petroleum Geologists Bulletin, v56 n5 p839-859 May 72.
SUPPLEMENTARY NOTE: Revision of report dated 9 Sep 71.

DESCRIPTORS: (*OCEAN BOTTOM TOPOGRAPHY, *SOUTH CHINA SEA), STRATIGRAPHY, SEDIMENTATION, GEOMAGNETISM, SEISMOLOGY (U)
IDENTIFIERS: SEISMIC REFLECTION METHOD (U)

Continuous seismic reflection profiles accompanied by total-field magnetic measurements were made in the China basin by civilian survey ships on contract to the U. S. Navy Oceanographic Office between 1967 and 1969. (Author) (U)

UNCLASSIFIED /Z0M07

AD- 749 392 14/5 8/7
UNIVERSITY OF SOUTHERN CALIFORNIA LOS ANGELES DEPT OF GEOLOGICAL SCIENCES

Underwater Time-Lapse Motion Picture Systems. (U)

DESCRIPTIVE NOTE: Technical rept., SEP 71 10P Summers,Herbert J. ;Palmer, Harold D. ;Stone,Richard O. ;
REPT. NO. TR-2
CONTRACT: N00014-67-A-0269-0002
PROJ: NR-388-085

UNCLASSIFIED REPORT

Availability: Pub. in Marine Geology, v11 pM51-M58 1971.
SUPPLEMENTARY NOTE: Prepared in cooperation with Dames and Moore, Los Angeles, Calif.

DESCRIPTORS: (*SEDIMENTATION, TRANSPORT PROPERTIES), (*OCEANOGRAPHY, *SEQUENTIAL PHOTOGRAPHY), UNDERWATER PHOTOGRAPHY, MOTION PICTURE PHOTOGRAPHY, OCEAN BOTTOM, TIDES (U)
IDENTIFIERS: *TIME LAPSE PHOTOGRAPHY (U)

Application of underwater time-lapse motion picture cameras to the study of sediment transport phenomena provides an economical and quantitative tool for the investigation of sea floor processes. Two camera systems are described, one can be operated on the ocean bottom from a pier, boat or float and the second is completely self-contained, self-powered and divorced from surface support. Time-lapse photography was used to determine growth rates of scour pit development, migration of organisms, ripple crest advance and sediment dispersal patterns. (Author) (U)

AD- 749 077 8/3
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Seasonal Variations of Coastal Currents off the Oregon-Northern California Coast. (U)

DESCRIPTIVE NOTE: Master's thesis, JUN 72 50P Whitson,William Frederick ;

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN CURRENTS, PERIODIC VARIATIONS), FLUID FLOW, VELOCITY, STATISTICAL DATA, VOLUME, THESES, COASTAL REGIONS, OREGON, CALIFORNIA, NAVAL RESEARCH (U)
IDENTIFIERS: SEASONAL VARIATIONS (U)

Seasonal longshore flow patterns are examined at four points along the Oregon-Northern California coast. Summer and winter activity is examined as far seaward as 25 nautical miles and as deep as 200 meters. Long-term mean hydrographic data are used to determine geostrophic velocities. A nearshore baroclinic southward flow is observed at each of the points during the summer. Winter currents are generally very small and largely barotropic in nature. Seasonal volume transports are presented based on data from moored current meters. (Author) (U)

AD- 749 018 8/10 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Cruise Report, KNORR 5, June-July 1970. (U)

DESCRIPTIVE NOTE: Technical rept., JUN 72 23P Heinmiller,R. ;
REPT. NO. WHOI-72-51
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEANOGRAPHIC EQUIPMENT, PERFORMANCE(ENGINEERING)), (*OCEAN CURRENTS, ATLANTIC OCEAN), (*BUOYS, MAINTENANCE), GULF STREAM (U)

KNOOR 5 carried out mooring work from 26 June to 10 July, 1970. Five moorings were set and seven recovered at Sites D (39 degrees 00 N., 70 degrees 00' W.), L (34 degrees 00' N., 70 degrees 00' W.), and the Gulf Stream. Additional work included hydro stations, BT's, CTD's and acoustic work. (Author) (U)

AD- 749 015 13/10 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Cruise Report, KNORR 17, 3-17 December 1970. (U)

DESCRIPTIVE NOTE: Technical rept., JUN 72 29P Heinmiller,R. ;
REPT. NO. WHOI-72-49
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT

DESCRIPTORS: (*MOORING BUOYS, MAINTENANCE), (*OCEAN CURRENTS, MEASUREMENT), RECOVERY, MOORING, SITE SELECTION, NETWORKS, DIAGRAMS, MAPS, GULF STREAM, NAVAL RESEARCH (U)

KNORR 17 carried out mooring work from 3 December to 17 December, 1970. A total of 12 moorings was set and seven recovered. All work was done at Sites D in the vicinity of the Gulf Stream. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 749 014 13/10 8/3
WOODS HOLE OCEANOGRAPHIC INSTITUTION MASS

Cruise Report, CHAIN 101, 29 January-14 February 1972. (U)

DESCRIPTIVE NOTE: Technical rept., JUN 72 26P Heinmiller,R. ;
REPT. NO. WHOI-72-48
CONTRACT: N00014-66-C-0241
PROJ: NR-083-004

UNCLASSIFIED REPORT

DESCRIPTORS: (*MOORING BUOYS, MAINTENANCE), (*OCEAN CURRENTS, MEASUREMENT), RECOVERY, MOORING, NETWORKS, SITE SELECTION, DIAGRAMS, MAPS, ATLANTIC OCEAN, NAVAL RESEARCH (U)

CHAIN 101 carried mooring work from 28 January to 14 February, 1972. A total of four moorings was set and seven recovered. Work was carried out at Site D and in the MODE area. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 748 721 20/4 13/10
OFFICE OF NAVAL RESEARCH ARLINGTON VA

Symposium on Naval Hydrodynamics (8th). Hydrodynamics in the Ocean Environment Held at Pasadena, Calif., 24-28 Aug 70, (U)

AUG 70 1179P Plesset,Milton S. ;Wu,T. Yao-Tsu ;Doroff,Stanley W. ;
REPT. NO. ONR-ACR-179

UNCLASSIFIED REPORT
Availability: Paper copy available from GPO $10.00 as stock no. 0851-0056.
SUPPLEMENTARY NOTE: See also AD-721 180.

DESCRIPTORS: (*HYDRODYNAMICS, *SYMPOSIA), (*OCEAN WAVES, DYNAMICS), (*OCEANOGRAPHY, SYMPOSIA), WAVE PROPAGATION, HARBORS, EQUATIONS OF MOTION, MATHEMATICAL MODELS, CAVITATION, TESTS, VORTICES, TURBULENCE, BOUNDARY LAYER, SHIPS, SHALLOW WATER (U)
IDENTIFIERS: AIR SEA INTERACTIONS (U)

The technical program in the hydrodynamics series is traditionally structured about a limited number of topics of current interest in naval hydrodynamics. In the case of the Eighth Symposium, 'Hydrodynamics in the Ocean Environment' was selected as the focal theme not only because of the present widespread research interest and activity in this subject but also in recognition of 1970 as the inaugural year of the 'International Decade of Ocean Exploration'. (U)

AD- 748 391 8/10
LEHIGH UNIV BETHLEHEM PA

In-Place Measurement of Deep Sea Soil Shear Strength, (U)

72 14P Richards,Adrian F. ; McDonald,V. J. ;Olson,R. E. ;Keller,G. H. ;
CONTRACT: N00014-67-A-0370-0005
PROJ: NR-083-248

UNCLASSIFIED REPORT
Availability: Pub. in Underwater Soil Sampling, Testing, and Construction Control, American Society for Testing and Materials Special Technical Publication No. 501, p55-68 1972.
SUPPLEMENTARY NOTE: Prepared in cooperation with Illinois Univ., Urbana, Contract Nonr-3985(09), Proj. NR-081-260, Texas Univ., Austin, and National Oceanic and Atmospheric Administration, Miami, Fla. Atlantic Oceanographic and Meteorological Labs.

DESCRIPTORS: (*OCEAN BOTTOM SAMPLING, DEEP WATER), (*OCEAN BOTTOM, SOIL MECHANICS), CLAY, SEDIMENTATION, OCEANOGRAPHIC EQUIPMENT, STRENGTH(PHYSIOLOGY), ATLANTIC OCEAN, MEXICO GULF (U)
IDENTIFIERS: *SEDIMENT CORES, SHEAR STRENGTH (U)

A vane shear device was developed for in-place measurement of the undrained strength of clays in the marine environment. It was designed to operate at a water depth of 4.6 km (15,000 ft) and to penetrate nearly 3 m (10 ft) below the mudline in steps of about 0.3 m (1 ft). The device contained its own power supply. Data were wire telemetered to the ship for recording and analysis. Experiments in several locations in the Atlantic Ocean and the Gulf of Mexico demonstrated the capability of the apparatus. (Author) (U)

AD- 748 370 8/3
LOUISIANA STATE UNIV BATON ROUGE COASTAL STUDIES INST

Field Observation of Nearshore Circulation and Meandering Currents. (U)

DESCRIPTIVE NOTE: Technical rept., MAR 72 16P Sonu,Choule J. ;
REPT. NO. TR-124
CONTRACT: N00014-69-A-0211-0003
PROJ: NR-388-002

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v17 n18 p3232-3247, 20 Jun 72.
SUPPLEMENTARY NOTE: Revision of report dated 15 Feb 72.

DESCRIPTORS: (*OCEAN CURRENTS, COASTAL REGIONS), BEACHES, TRANSPORT PROPERTIES, OCEAN WAVES, OCEAN BOTTOM TOPOGRAPHY, TIDES, REFRACTION, ENERGY, DYES, MATHEMATICAL ANALYSIS (U)
IDENTIFIERS: LONGSHORE CURRENTS (U)

Field observations were made of wave-induced nearshore circulations and meandering longshore currents on an undulatory surf-zone bed, under the action of uniform incident waves. Circulations were associated with normal-wave incidence; meandering currents were associated with oblique-wave incidence. The transport in the observed circulations generally agreed with Bowen's (1967) linear theory based on the concept of radiation stress (longuet-Higgins and Stewart, 1962, 1964), provided that a friction coefficient C = 0.014 was assumed. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 748 366 8/10
TEXAS A AND M UNIV COLLEGE STATION DEPT OF OCEANOGRAPHY

Power Spectra of Temperature and Salinity Fluctuations in the Slope Water off Cape Hatteras, (U)

JUL 71 12P Ichiye,Takashi ;
CONTRACT: N00014-68-A-0308-0002, NSF-GA-26498

UNCLASSIFIED REPORT
Availability: Pub. in Pure and Applied Geophysics (PAGEOPH), v96 p205-216 1972.

DESCRIPTORS: (*SEA WATER, TEMPERATURE), (*ATLANTIC OCEAN, SALINITY), POWER SPECTRA, GULF STREAM, STATISTICAL ANALYSIS, BATHYTHERMOGRAPHS, INFRARED EQUIPMENT, THERMOMETERS, AIRBORNE, COASTAL REGIONS, NORTH CAROLINA (U)
IDENTIFIERS: CAPE HATTERAS, SALINITY PROFILES, PROFILES, TEMPERATURE (U)

Eleven STD stations by lowering and raising the sensor were occupied about 170 n. miles northeast of Cape Hatteras in June, 1968. The stations were located in the slope water region covered by the upper warm water from the Gulf Stream. Power spectra of temperature and salinity fluctuations at 1-meter depth intervals were computed versus vertical wave numbers for the upper layer (5-320 m) and lower layer (320-1000 m) at each station. The power law coefficients of the spectra about the vertical wave number are between -5/3 and -3. These coefficients indicate that the temperature and salinity fluctuations are influenced by stratification as well as by turbulence. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 748 309 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Sea Floor Geothermal Measurements from VEMA Cruise 25. (U)

DESCRIPTIVE NOTE: Technical rept. nos. 2 and 4, Jan-Apr 68,
MAY 72 168P Langseth,Marcus G. , Jr.;
Malone,Isabel E. ;Bookman,Charles A. ;
CONTRACT: N00014-67-A-0108-0004, NSF-GP-5356
PROJ: NR-083-142

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Sponsored in part by Grant NSF-GA-1412.

DESCRIPTORS: (*ATLANTIC OCEAN, OCEAN BOTTOM), (*OCEAN BOTTOM, THERMAL PROPERTIES), DEEP WATER, SEDIMENTATION, SEA WATER, TEMPERATURE, INTERFACES, THERMISTORS, PRESSURE GAGES, HYDROGRAPHIC SURVEYING, OCEANOGRAPHIC SHIPS, TABLES(DATA) (U)
IDENTIFIERS: VEMA VESSEL (U)

The report presents geothermal data representing 75 stations in the Atlantic Ocean. This material includes deep water and sediment temperatures as well as conductivity measurements from sediment cores. (Author) (U)

AD- 748 199 20/1 8/10
NAVAL UNDERWATER SYSTEMS CENTER NEWPORT R I

Digital Processing of Explosive-Source Ocean-Bottom-Reflected Acoustic Signals. (U)

DESCRIPTIVE NOTE: Research rept., AUG 72 39P Santaniello,Salvatore R. ;van der Veen,Steven R. ;
REPT. NO. NUSC-TR-4337
PROJ: NUSC-A-650-06, SF11-552
TASK: SF11-552-002

UNCLASSIFIED REPORT

DESCRIPTORS: (*UNDERWATER SOUND, REFLECTION), (*OCEAN BOTTOM SAMPLING, ACOUSTIC DETECTORS), UNDERWATER EXPLOSIONS, OCEAN BOTTOM, REFLECTIVITY, FOURIER ANALYSIS, INTEGRAL TRANSFORMS, PACIFIC OCEAN (U)
IDENTIFIERS: NORTH PACIFIC OCEAN, RAY TRACING, SIGNAL PROCESSING, FOURIER TRANSFORMATION (U)

Low-frequency (100-Hz to 800-Hz) measurements of bottom-reflection losses in the North Pacific Ocean are discussed with respect to processing and modeling techniques. The data were acquired using shallow-depth (500-foot) explosive sound sources and a deep-depth (11,000-foot) hydrophone and were first processed on a total energy basis in 1/3-octave bands. An inverse filtering technique (deconvolution) for improving the ability to resolve sub-bottom reflections was successfully implemented and is also described. A multi-layered, absorbing, ocean bottom model was constructed and gave fair to good prediction of bottom loss. The structure of the model was determined mainly by acoustic methods where the composition was estimated from geological descriptions for the area. The model's inadequacies, particularly the importance of attenuation in low-frequency bottom-reflection prediction, are discussed. (Author) (U)

AD- 748 014 8/1
SMITHSONIAN INSTITUTION WASHINGTON D C

Mediterranean Biological Studies. Volume II. Appendices 2, 3, 4, Tables 47-613. (U)

DESCRIPTIVE NOTE: Final rept., JUL 72 276P Goodyear,Richard H. ;Gibbs, Robert H. , Jr.;Roper,Clyde F. E. ; Kleckner,Robert C. ;Sweeney,Michael J. ;
REPT. NO. 7250-Vol-2
CONTRACT: N00014-67-A-0399-0007
PROJ: NR-292-045

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-748 013.

DESCRIPTORS: (*MARINE BIOLOGY, *MEDITERRANEAN SEA), FISHES, ABUNDANCE, GROWTH(PHYSIOLOGY), DEPTH FINDING, COLLECTING METHODS, CLASSIFICATION, TABLES(DATA) (U)

The tables in this appendix are among those that were used in analyzing the fish data, the results of which appear in Part 3 of the Text. For each species with sufficient data, four sets of tables are presented; the tables in each set are arranged numerically by station, and the sets appear in the following order: Stage-size, size frequency distributions for each stage or stage-sex combination; Stage-depth, catch rate as a function of stage of development and depth of capture; Depth-size: day; and depth-size:night. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 748 013 8/1
SMITHSONIAN INSTITUTION WASHINGTON D C

Mediterranean Biological Studies. Volume I. (U)

DESCRIPTIVE NOTE: Final rept.,
JUL 72 351P Goodyear,Richard H. ;Gibbs, Robert H. , Jr.;Roper,Clyde F. E. ; Kleckner,Robert C. ;Sweeney,Michael J. ;
REPT. NO. 7250-Vol-1
CONTRACT: N00014-67-A-0399-0007
PROJ: NR-292-045

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Errata sheet inserted. See also Volume 2, AD-748 014.

DESCRIPTORS: (*MARINE BIOLOGY, *MEDITERRANEAN SEA), COLLECTING METHODS, HYDROGRAPHIC SURVEYING, AQUATIC ANIMALS, ECOLOGY, FISHES, CEPHALOPODA, BATHYTHERMOGRAPH DATA, OXYGEN, ABUNDANCE, GROWTH(PHYSIOLOGY), REPRODUCTION(PHYSIOLOGY), DATA PROCESSING, LARVAE, UNDERWATER SOUND, SCATTERING (U)

From late August to early October, 1970, biological sampling was conducted at five stations in the Mediterranean Sea to provide material for studies of the composition and vertical distribution of the midwater fauna. The five widely spaced stations provided discrete-depth samples from very different hydrographic regimes from one end of the Mediterranean to the other. Part 1 of the report explains the methods and materials used in collecting and processing the biological samples; Part 2 treats the hydrography of the five stations; Part 3 treats the ecology and vertical distribution of the fishes; Part 4 explains swimbladder structure of the fishes and a method of comparing swimbladder data with acoustic profiles, and Part 5 treats the ecology and vertical distribution of the cephalopods. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 748 012 8/10
STATE UNIV OF NEW YORK STONY BROOK MARINE SCIENCES RESEARCH CENTER

Hydrographic Study of the Shelf and Slope Waters of New York Bight. (U)

DESCRIPTIVE NOTE: Technical rept. 1970-1971,
AUG 72 50P Bowman,Malcolm J. ;Weyl, Peter K. ;
REPT. NO. TR-16
CONTRACT: N00014-68-C-0298

UNCLASSIFIED REPORT

DESCRIPTORS: (*SEA WATER, TEMPERATURE), (*HYDROGRAPHIC SURVEYING, CONTINENTAL SHELVES), SALINITY, HARBORS, CHLOROPHYLLS, OCEANOGRAPHIC SHIPS, COLLOIDS, OPTICAL PROPERTIES, SURFACE PROPERTIES, SAMPLING, DEEP WATER, SHALLOW WATER, NEW YORK, ATLANTIC OCEAN (U)
IDENTIFIERS: *NEW YORK BIGHT (U)

The report presents results obtained from three oceanographic cruises made by the Marine Sciences Research Center during 1970 and 1971 to investigate the physical characteristics of the shelf and slope waters of New York Bight. The existence of a sharp temperature-salinity front over the continental slope was confirmed during the months of June 1970 and April 1971. Associated with this front is a subsurface warm tongue delineated by a temperature maximum which intersects the edge of the shelf at a depth of about 150 meters. Data obtained in August 1971 showed no evidence of any temperature front over the slope but suggested the existence of an irregular salinity gradient in this region. (Author) (U)

AD- 748 008 8/3
DELAWARE UNIV NEWARK DEPT OF CIVIL ENGINEERING

Bottom Topography Effects on Ocean Currents. (U)

DESCRIPTIVE NOTE: Geophysical Fluid Dynamics rept. no. 6,
JUN 72 138P Guala,John Riddoch , Jr;
CONTRACT: N00014-70-A-0113-0002
PROJ: NR-083-259

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Doctoral thesis.

DESCRIPTORS: (*OCEAN CURRENTS, OCEAN BOTTOM TOPOGRAPHY), FLOW FIELDS, MATHEMATICAL MODELS, MODELS(SIMULATIONS), ANTARCTIC REGIONS, BOUNDARY LAYER, WIND, SHEAR STRESSES, VISCOSITY, TURBULENCE, THESES, NAVAL RESEARCH (U)

The effects of bottom topography on ocean currents are considered. it is shown that a laminar laboratory model with height to width ratio differing from that of large scale geophysical motions can be used to model topographic effects on ocean currents. The governing vorticity equation is solved analytically for the flow over long constant cross-section ridges. The vorticity equation, given by a balance of inertial, Ekman suction and topographic terms, is solved numerically for the behavior of the Antarctic Circumpolar Current in the vicinities of both the Macquarie and Kerguelen-Gaussberg Ridges. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 747 908 4/2
ISTITUTO DI FISICA DELL'ATMOSFERA ROME (ITALY)

Condensation Nuclei Measurements in Marine Atmosphere (Mediterranean Sea), (U)

JUN 71 13P Colacino,M. ;Dalu,G. A. ;
REPT. NO. IFA-CP-270

UNCLASSIFIED REPORT
Availability: Pub. in Pure and Applied Geophysics (PAGEOPH), v93 n1 p205-213 1972.

DESCRIPTORS: (*MARINE METEOROLOGY, MEDITERRANEAN SEA), CONDENSATION, EVAPORATION, HEAT TRANSFER, ATMOSPHERIC ELECTRICITY, SURFACE TEMPERATURE, BAROMETRIC PRESSURE, HUMIDITY, WIND, ITALY (U)
IDENTIFIERS: MARINE ATMOSPHERES, *CONDENSATION NUCLEI (U)

After a short description of the soundings carried out during an oceanographical survey in the Sicilian and Sardinian channels in May and June 1970, the results of the nuclei condensation measurements in the sea are here reported. The data presented are the first about condensation nuclei countings in the Mediterranean. The values found are very similar to those ones found by other researchers, during surveys carried out in the Atlantic and Pacific Oceans, even if there is no direct reference to them. (Author) (U)

AD- 747 907 8/3
DELAWARE UNIV NEWARK

Model of the Antarctic Circumpolar Current in the Vicinity of the Macquarie Ridge. (U)

72 16P Boyer,Don L. ;Guala,John R. ;

CONTRACT: N00014-70-A-0113-0002
PROJ: NR-083-259

UNCLASSIFIED REPORT

Availability: Pub. in Antarctic Oceanology II: The Australian-New Zealand Sector, p79-93 1972.
SUPPLEMENTARY NOTE: Pub. as Antarctic Research Series Vol 19.

DESCRIPTORS: (*OCEAN CURRENTS, *ANTARCTIC REGIONS), OCEAN BOTTOM TOPOGRAPHY, INCOMPRESSIBLE FLOW, DEFLECTION, DEPTH FINDING, BOUNDARY LAYER, VORTICES, ROTATION, VISCOSITY, MATHEMATICAL MODELS (U)
IDENTIFIERS: MACQUARIE RIDGE, BATHYMETRY, EDDIES (U)

Both theoretical and laboratory models of the antarctic circumpolar current in the vicinity of the Macquarie ridge are presented. The models consider a homogeneous_imcompressible flow but neglect wind shear stress and beta effects. The major phenomenon addressed is that of the deflection of the current due to the effects of bottom topography. The large-scale flow features indicated by the oceanographic data in this region are generally reproduced by the models. For example, for certain model parameters, large eddies are shed from the southern tip of the Macquarie ridge. The characteristics of this shedding lend support to A. L. Gordon's speculation that the double polar front zone found east of the Macquarie ridge system is formed by the shedding of eddies from the tip of the ridge. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 747 792 8/10 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Physical and Chemical Data from Cruise 41 of USNS ELTANIN in Southern Ocean Between Australia and Antarctica, 20 December 1969 - 16 February 1970. (U)

72 67P
REPT. NO. SIO-Ref-72-19
CONTRACT: N00014-69-0200-6006

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with Horace Lamb Centre for Oceanographical Research. Rept. no. HLC Cruise Rept-10, Flinders University of South Australia, University of California, San Diego, and Johns Hopkins University, Baltimore, Md. Dept. of Earth and Planetary Sciences. Sponsored in part by National Science Foundation, Washington, D. C., Antarctic Research Program, and University of California.

DESCRIPTORS: (*OCEANOGRAPHIC DATA, *PACIFIC OCEAN), OCEANOGRAPHIC SHIPS, HYDROGRAPHIC SURVEYING, TIDES, OCEAN CURRENTS, SEA WATER, CHEMICAL PROPERTIES, PH FACTOR, OXYGEN, TEMPERATURE, SILICATES, PHOSPHATES, SALINITY, TABLES(DATA), AUSTRALIA, ANTARCTIC REGIONS (U)
IDENTIFIERS: ELTANIN VESSEL (U)

The primary purpose of Crusie 41 was to launch three Munk-Snodgrass internally recording tide capsules at 40, 50 and 60 degrees S along 132 degrees E (during the first leg) and to retrieve the capsules after they had spent approximately one month on the bottom (during the second leg). This data report presents only the hydrographic cast materials. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 747 420 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Graded-Bed Sequences Emplaced by Turbidity Currents North of 20 degrees N in the Pacific, Atlantic and Mediterranean, (U)

OCT 71 27P Horn,D. R. ;Ewing,J. I. ;Ewing,M. ;
REPT. NO. LDGO-1782
CONTRACT: N00014-67-A-0108-0004, N00024-70-C-1344
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Sedimentology, v18 p247-275 1972.
SUPPLEMENTARY NOTE: Sponsored in part by Grant NSF-GA-19690. Revision of report dated 28 Apr 71.

DESCRIPTORS: (*PACIFIC OCEAN, SEDIMENTATION), (*ATLANTIC OCEAN, SEDIMENTATION), (*MEDITERRANEAN SEA, SEDIMENTATION), OCEAN CURRENTS, TRANSPORT PROPERTIES, OCEAN BOTTOM SAMPLING (U)
IDENTIFIERS: NORTH PACIFIC OCEAN, NORTH ATLANTIC OCEAN (U)

All core evidence supports the conclusion that abyssal plains are sites of graded-bed sequences deposited from turbidity flows. The deposits appears to be present-day equivalents of thin- to medium-bedded, graded, flysch-type sands and silts of many ancient geosynclines and sedimentary basins. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 747 417 8/10
SCRIPPS INSTITUTION OF OCEANOGRAPHY SAN DIEGO CALIF MARINE PHYSICAL LAB

Sedimentation and Erosion on Horizon Guyot. (U)

DESCRIPTIVE NOTE: Summary rept., AUG 71 29P Lonsdale,Peter ;Normark, William R. ;Newman,W. A. ;
REPT. NO. MPL-U-78/70
CONTRACT: N00014-69-A-0200-6002, NSF-GA-20014
PROJ: NR-260-103

UNCLASSIFIED REPORT
Availability: Pub. in Geological Society of America Bulletin, v83 p289-316 Feb 72.
SUPPLEMENTARY NOTE: Revision of report dated 10 May 71.

DESCRIPTORS: (*OCEAN BOTTOM TOPOGRAPHY, EROSION), (*OCEAN BOTTOM SAMPLING, *PACIFIC OCEAN), SEDIMENTATION, OCEAN CURRENTS, SAND, TRANSPORT PROPERTIES, FLOWMETERS, HYDROGRAPHIC SURVEYING (U)
IDENTIFIERS: OCEAN RIDGES, SEAMOUNTS (U)

A small part(300 sq km) of the 2-km-deep summit of Horizon Guyot, a flat-topped submarine ridge at the eastern end of the Mid-Pacific Mountains, was surveyed in detail with a deeply towed instrument package. Three hundred and fifty stereo pairs of bottom photographs were taken, intensive coring and rock dredging were carried out, and near-bottom current meters were deployed. Continuing erosion has winnowed away the fine components of the sediment, while bedload transport of the remaining foraminiferal sand creates regular trains of ripples and dunes. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 747 416 8/10 8/7
SCRIPPS INSTITUTION OF OCEANOGRAPHY SAN DIEGO CALIF MARINE PHYSICAL LAB

Crustal Extension between the Tonga and Lau Ridges: Petrologic and Geophysical Evidence. (U)

DESCRIPTIVE NOTE: Summary rept.,
JUL 71 15P Sclater,John G. ;Hawkins, James W. ;Mammerickx,Jacqueline ;Chase,Clement G. ;
REPT. NO. MPL-U-46/70
CONTRACT: N00014-69-A-0200-6002, NSF-GA-29159X
PROJ: NR-260-103

UNCLASSIFIED REPORT

Availability: Pub. in Geological Society of America Bull., v83 p505-518 Feb 72.
SUPPLEMENTARY NOTE: Revision of report dated 26 Apr 71.

DESCRIPTORS: (*MARINE GEOPHYSICS, *PACIFIC OCEAN), BASALT, CHEMICAL PROPERTIES, FAULTS(GEOLOGY), STRUCTURAL GEOLOGY, THEORY, OCEAN BOTTOM TOPOGRAPHY, EARTHQUAKES, EPICENTERS, PETROLOGY (U)
IDENTIFIERS: PLATE TECTONICS (U)

The Lau Basin, which lies between the Tonga and Lau Ridges, is characterized by an absence of sediment, high but variable heat flow, and a confused magnetic anomaly pattern. A ridge 300 km long and 40 km wide runs northwest-southeast through the western part of the basin. This ridge is composed of fresh tholeiitic basalt and is associated with a linear band of shallow-focus earthquakes. Chemical analysis of unaltered glassy and aphanitic phenocryst-free pillow fragments indicates that the parent liquids may have been derived from mantle depths of about 50 km. The geophysical and geological data are interpreted within the framework of the theory of plate tectonics. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 747 280 12/1 8/3 20/4
DENVER UNIV COLO DEPT OF MATHEMATICS

Asymptotic Methods for Ordinary and Partial Differential Equations with Application to Energy Propagation in Fluid Dynamics. (U)

DESCRIPTIVE NOTE: Final rept.,
AUG 72 13P Bleistein,N. ;
REPT. NO. DU-MS-7102
CONTRACT: AF-AFOSR-1923-70
PROJ: AF-9749
MONITOR: AFOSR TR-72-1597

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated Jul 71, AD-728 226.

DESCRIPTORS: (*DIFFERENTIAL EQUATIONS, HYDRODYNAMICS), (*OCEAN WAVES, EQUATIONS OF MOTION), FLUID FLOW, INTEGRALS, FOURIER ANALYSIS, PARTIAL DIFFERENTIAL EQUATIONS, PERTURBATION THEORY, ASYMPTOTIC SERIES (U)
IDENTIFIERS: ORDINARY DIFFERENTIAL EQUATIONS, BIFURCATION THEORY, RAY TRACING, INTERNAL WAVES, EIGENVECTORS (U)

The report contains three section on research progress: Analysis of internal waves in an inhomogeneous fluid; Bifurcation in regular and singular eigenvalue problems; Asymptotic expansion of integrals. (Author) (U)

AD- 747 229 8/3 13/2
UNIVERSITY OF SOUTHERN CALIFORNIA LOS ANGELES DEPT OF GEOLOGICAL SCIENCES

Field Observations of Sand Transport by Shoaling Waves, (U)

FEB 72 23P Cook,David O. ;Gorsline, Donn S. ;
CONTRACT: N00014-67-A-0269, Nonr-228(17)

UNCLASSIFIED REPORT
Availability: Pub. in Marine Geology, p31-55 n.d.
SUPPLEMENTARY NOTE: Revision of report dated 12 Oct 71.

DESCRIPTORS: (*OCEAN WAVES, SAND), (*SAND, TRANSPORT PROPERTIES), BEACHES, SEA BREEZE, OCEAN CURRENTS, PARTICLE SIZE, OSCILLATION, MATHEMATICAL PREDICTION, PACIFIC OCEAN, CALIFORNIA (U)
IDENTIFIERS: BEACH EROSION, *SEDIMENT TRANSPORT (U)

A study of wave-generated currents and associated sand transport in the offshore zone of southern California has modified several previously-recognized theories concerning sedimentary processes in this region. A set of passing waves generates oscillating currents at the sea floor which have a spectrum of velocities whose average strengths over broad shelves are predicted accurately by classical wave theory. Long period swells and offshore breezes cause a net transport of bottom water towards the beach, while short period waves and onshore winds are associated with neutral or seaward flow. Ripple waves marks on the shallow sea floor, whose dimensions are a function of sediment size and current velocity, allow all available sand sizes to be moved with equal ease. A ripple remains in the same position even though sediment and water may be differentially transported. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 747 043 8/10 8/3
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Suspended Particulates Matter in the Deep Water of the North American Basin, (U)

72 47P Eittreim,Stephen ;Ewing, Maurice ;
REPT. NO. LDGO-1602
CONTRACT: N00014-67-A-0108-0004, NSF-GA-1615
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Studies in Physical Oceanography, p123-167 1972. Paper 20.

DESCRIPTORS: (*SEA WATER, SEDIMENTATION), (*OCEAN CURRENTS, *ATLANTIC OCEAN), PARTICLES, SCATTERING, CLAY, SILT, SILICATES, CARBONATES, ORGANIC MATERIALS, THICKNESS, OCEAN CURRENTS, TURBULENCE, LIQUID FILTERS, PARTICLE SIZE, NAVAL RESEARCH, LIGHT TRANSMISSION (U)
IDENTIFIERS: LIGHT SCATTERING, *NEPHELOID ZONE, *SUSPENDED SEDIMENTS (U)

The turbulence associated with the vigorous bottom currents of the western North Atlantic maintains a nepheloid layer with an average thickness of one kilometer. The layer covers the continental rise, abyssal plains and Bermuda Rise. On the average, a tenfold increase in light scattering occurs from the clearest water above to the most nepheloid water near the bottom. Filtration of water samples taken in and above the nepheloid layer and analysis by microscopic particle counting establish an empirical relation between light scattering and particulate matter concentration. The light scattering is caused by suspended particles (and aggregates of particles) of (a) clays and silts, (b) silicate and carbonate test fragmetns and (c) other organic material. The concentrations in the most intense light scattering regions are about 0.1 ppm. (Author) (U)

AD- 746 880 4/2
ENVIRONMENTAL PREDICTION RESEARCH FACILITY (NAVY) MONTEREY CALIF

Speed of Tropical Storms and Typhoons after Recurvature in the Western North Pacific Ocean, (U)

JUL 72 38P Burroughs,Lawrence D. ; Brand,Samson ;
REPT. NO. ENVPREDRSCHFAC-tech-paper-7-72

UNCLASSIFIED REPORT

DESCRIPTORS: (*TROPICAL CYCLONES, VELOCITY), (*WEATHER FORECASTING, TROPICAL CYCLONES), (*MARINE METEOROLOGY, PACIFIC OCEAN), DIRECTION FINDING, ACCELERATION, MATHEMATICAL PREDICTION (U)
IDENTIFIERS: NORTH PACIFIC OCEAN, STORM TRACKS (U)

Twenty-five years of tropical cyclone data (1945-1969) for the western North Pacific were evaluated to determine the speed of movement characteristics of tropical storms and typhoons following recurvature. The results show that the acceleration of storms following recurvature is a function of the time of year, the meteorological characteristics of the storm, and the surrounding synoptic environment. Forecast equations derived by linear regression techniques are presented for the speed of movement of tropical cyclones 36 hours after recurvature. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 746 854 8/10 8/3
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

The Nepheloid Layer and Bottom Circulation in the Guinea and Angola Basins, (U)

72 18P Connary,Stephen Dodd ;Ewing, Maurice ;
REPT. NO. LDGO-1617
CONTRACT: N00014-67-A-0108-0004
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Studies in Physical Oceanography, p169-184 1972, Paper 21.

DESCRIPTORS: (*SEA WATER, LIGHT TRANSMISSION), (*OCEAN CURRENTS, *ATLANTIC OCEAN), OCEAN BOTTOM, SCATTERING, THICKNESS, TEMPERATURE, SALINITY, OCEAN BOTTOM TOPOGRAPHY, SEDIMENTATION (U)
IDENTIFIERS: LIGHT SCATTERING, *NEPHELOID ZONE, SUSPENDED SEDIMENTS, TURBIDITY (U)

A nepheloid layer less than 200 m thick is present in the eastern Guinea Basin; in the Angola Basin, the nepheloid layer is 500 to 1500 m thick and may be correlated with the homogeneous bottom water. A thicker layer is found in areas of higher topographic relief. In the deep part of both basins, the scattering intensity of the most turbid water of the nepheloid layer is about 1.5 times greater than that in the clearest water in the column. Compared to the Guinea and Angola Basins, scattering intensities are greater in the western North Atlantic by a factor of about 6, in the western South Atlantic and Cape Basin by about 4, and are roughly comparable to those in the North Pacific. One or more prominent light scattering zones above the main nepheloid layer is typical at stations on the continental slope of the Guinea and Angola Basins, but these zones are weak or absent in the deep basins. Recent temperature and salinity data broadly support the earlier conclusions on deep circulation in these basins. (Author) (U)

AD- 746 839 20/1
NAVAL ORDNANCE LAB WHITE OAK MD

Acoustic Measurements in the West Greenland Sea, (U)

JUN 72 17P Bradley,David L. ;Colvin, Gabriel M. ;
REPT. NO. NOLTR-72-134
PROJ: A370-370C/WF00-125-702

UNCLASSIFIED REPORT

DESCRIPTORS: (*UNDERWATER SOUND, SOUND TRANSMISSION), (*GREENLAND SEA, UNDERWATER SOUND), REVERBERATION, VELOCITY, SONOBUOYS, ICEBREAKERS, SEA ICE, POLAR REGIONS, OCEANOGRAPHIC DATA, COAST GUARD RESEARCH, NAVAL RESEARCH (U)
IDENTIFIERS: ACOUSTIC VELOCITY, PROFILES, *UNDERWATER SOUND TRANSMISSION (U)

Acoustic ambient noise, transmission loss and reverberation measurements were made in the West Greenland Sea at the edge of the permanent polar ice polar ice pack during the fall of 1971. The data was collect with the assistance of the U. S. Coast Guard, while deployed on one of its oceanographic data collection cruises. The sound sources for transmission loss and reverberation measurements were standard U. S. Navy explosive sound signals. The receiving system consisted of calibrated sonobuoys which were monitored both from helicopters and the Coast Guard icebreaker. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 746 832 4/2 8/3
OREGON STATE UNIV CORVALLIS DEPT OF OCEANOGRAPHY

1970 TOTEM Wind and Current Data, (U)

MAY 72 72P Plutchak,Noel B. ;
REPT. NO. Data-52, Ref-72-13
CONTRACT: N00014-68-A-0148
PROJ: NR-083-230

UNCLASSIFIED REPORT

DESCRIPTORS: (*MARINE METEOROLOGY, *WIND), (*OCEAN CURRENTS, *PACIFIC OCEAN), POWER SPECTRA, CORRELATION TECHNIQUES, STATISTICAL DATA, TIME SERIES ANALYSIS, DATA PROCESSING, MOORING BUOYS, REAL TIME, OREGON (U)
IDENTIFIERS: AIR WATER INTERACTIONS, THEMIS PROJECT (U)

First-order analyses of wind and current time series obtained from a Totem buoy off the Oregon coast during 1970 are presented. In addition, winds at Totem are compared with winds recorded simultaneously at Newport, Oregon. (Author) (U)

AD- 746 519 8/3
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

The Effect of the Reykjanes Ridge on the Flow of Water above 2000 Meters, (U)

72 24P Langseth,Marcus G. , Jr.; Boyer,Don ;
REPT. NO. LDGO-1606
CONTRACT: N00014-67-A-0108-0004, Nonr-266(79)
PROJ: NR-038-142

UNCLASSIFIED REPORT
Availability: Pub. in Studies in Physical Oceanography, p93-114 1972, Paper 18.
SUPPLEMENTARY NOTE: Prepared in cooperation with Delaware Univ., Newark, Grant NSF-GA-943.

DESCRIPTORS: (*OCEAN CURRENTS, OCEAN BOTTOM), (*OCEAN BOTTOM TOPOGRAPHY, *ATLANTIC OCEAN), MATHEMATICAL MODELS, SEDIMENTATION, PRESSURE, HYDROGRAPHIC SURVEYING, DEEP WATER, CONTINENTAL SHELVES, ICELAND (U)
IDENTIFIERS: MIDATLANTIC RIDGE, REYKJANES RIDGE, VEMA VESSEL (U)

Drift and set of the research ship Vema during a detailed survey of the Reykjanes Ridge revealed a surface current pattern with flow to the southwest over the eastern flank of the ridge and northeast over the western flank. The flow is essentially parallel with the isobaths of the plunging ridge. Dynamic calculations using hydrographic data indicates that geostrophic flow above 1500 m sometimes follows the same pattern but the pattern is not a constant feature of the area. Experiments carried out in the laboratory modeling flow over a plunging ridge on a rotating frame demonstrate that such a pattern can occur when a deep westward flowing current encounters a southward dipping ridge crest. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 746 515 8/10
OREGON STATE UNIV CORVALLIS DEPT OF OCEANOGRAPHY

Hydrographic Data from Oregon Waters, 1971, (U)

MAY 72 80P Wyatt,Bruce ;Tomlinson, Richard ;Gilbert,William ;Gordon,Louis ; Barstow,Dennis ;
REPT. NO. DATA-53, Ref-72-14
CONTRACT: N00014-67-A-0369-0007, NSF-GA-12113
PROJ: NR-083-102

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-735 904.

DESCRIPTORS: (*OCEANOGRAPHIC DATA, *PACIFIC OCEAN), HYDROGRAPHIC SURVEYING, SALINITY, NITRATES, NITRITES, SURFACE TEMPERATURE, OXYGEN, PH FACTOR, BASES(CHEMISTRY), SILICATES, WIND, MARINE METEOROLOGY, TABLES(DATA), OREGON (U)

Salinity, temperature, oxygen, phosphate, and nitrate observations were taken by Oregon State University during 17 hydrographic cruises in the Northeastern Pacific. Alkalinity, pH and silicate were taken on special occasions. (U)

AD- 746 415 8/10
NEW YORK UNIV BRONX GEOPHYSICAL SCIENCES LAB

Precipitation, Evaporation and Monthly Salinity Variations in the Inner Gulf of Guinea near the Equator, (U)

72 29P Neumann,G. ;
REPT. NO. Contrib-90
CONTRACT: Nonr-285(57)

UNCLASSIFIED REPORT
Availability: Pub. in the Studies in Physical Oceanography, v1 p19-48 1972.

DESCRIPTORS: (*SEA WATER, *SALINITY), ATMOSPHERIC PRECIPITATION, EVAPORATION, OCEAN CURRENTS, INTERACTIONS, PERIODIC VARIATIONS, GULFS, ATLANTIC OCEAN, NAVAL RESEARCH (U)
IDENTIFIERS: *GUINEA GULF (U)

An attempt is made to explain sea surface salinity variations from month to month in the ocean area east of Sao Tome' Island in the inner Gulf of Guinea. Estimates of the monthly amounts of precipitation (P) and evaporation (E) in this area indicate that during most of the year P exceeds E. For the annual mean, E - P = -4.2 cm/month, and the seasonal variation of E - P is dominated by precipitation with a strong tendency toward a semi-annual march. In addition to E - P, effects of vertical mixing are most significant, particularly in spring when subsurface water with high salinity is injected into this region by the Equatorial Undercurrent. (Author) (U)

AD- 746 409 8/10 8/3
CALIFORNIA UNIV SAN DIEGO LA JOLLA INST OF GEOPHYSICS AND PLANETARY PHYSICS

Internal Waves in a Sheeted Thermocline, (U)

SEP 71 18P Miles,John W. ;
CONTRACT: N00014-69-A-0200-6005, NSF-GA-10324

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Fluid Mechanics, v53 pt3 p557-573 1972.

DESCRIPTORS: (*MEDITERRANEAN SEA, *THERMOCLINES), INTEGRAL EQUATIONS, APPROXIMATION(MATHEMATICS), CURVE FITTING, GRAPHICS, OCEAN WAVES (U)
IDENTIFIERS: FREDHOLM EQUATIONS, *INTERNAL WAVES, EIGENVECTORS (U)

The eigenvalue problem for internal waves in a thermocline for which the density profile may exhibit finite discontinuities is formulated as a homogeneous Fredholm integral equation. The corresponding quadratic functional yields both upper and lower bounds for the dominant-mode eigenvalue and lower bounds for the remaining eigenvalues (which are proportional to the square of the wave speed) for any value of the wavenumber. The various approximations are compared with the exact results for a thermocline with a hyperbolic-tangent density profile, a three-sheeted thermocline, and a five-sheeted model of the summer thermocline in the Mediterranean. (Author) (U)

AD- 746 365 8/3
ARMY COASTAL ENGINEERING RESEARCH CENTER WASHINGTON D C

A Wave Climatology for U. S. Coastal Waters, (U)

MAY 72 17P Thompson,Edward F. ;Harris, D. Lee ;
REPT. NO. CERC-Reprint-1-72

UNCLASSIFIED REPORT
Availability: Pub. in Proceedings of the Offshore Technology Conference (4th annual), Houston, Tex. May 1-3, 1972. Paper no OTC-1693.

DESCRIPTORS: (*OCEAN WAVES, STATISTICAL ANALYSIS), COASTAL REGIONS, HEIGHT FINDING, DISTRIBUTION FUNCTIONS, CORRELATION TECHNIQUES, STATISTICAL DATA, ATLANTIC OCEAN, PACIFIC OCEAN, MEXICO GULF (U)
IDENTIFIERS: COASTS (U)

Over the past 20 years, the Coastal Engineering Research Center has operated wave gages along the Atlantic, Pacific, and Gulf coasts of the U. S. Cumulative wave height distribution functions for ten gage locations have been studied in the format of the exponential distribution. One complete year of data, at six observations per day, appears to give a reliable wave height distribution up to the 1% level of occurrence. Wave data from shipboard weather reports have been compared to wave gage data and found to be of some use in describing long term summaries of coastal wave height conditions. (Author) (U)

AD- 746 205 8/10 12/1
SACLANT ASW RESEARCH CENTRE LA SPEZIA (ITALY)

The Numerical Solution of Parabolic Equations Applied to 'Eddy Diffusion' in the Ocean. (U)

DESCRIPTIVE NOTE: Technical memo.,
JUN 72 43P Krol,Hans R. ;
REPT. NO. SACLANTCEN-TM-178

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: NATO furnished.

DESCRIPTORS: (*SEA WATER, TRANSPORT PROPERTIES), (*PARTIAL DIFFERENTIAL EQUATIONS, NUMERICAL INTEGRATION), CONDUCTION(HEAT TRANSFER), TEMPERATURE, SALINITY, NUMERICAL ANALYSIS, TIME SERIES ANALYSIS, MOMENTUM, OCEAN CURRENTS, DIFFUSION, ITALY (U)
IDENTIFIERS: *PARABOLIC DIFFERENTIAL EQUATIONS, TURBULENT DIFFUSION (U)

The paper describes the main features of the numerical solution of parabolic partial differential equations with particular application to the 'eddy heat conduction' problem in the ocean. As an example, some direct calculations are made of the 'eddy heat conduction' coefficient from the data of MILOCMED 68 under the assumption that there were no horizontal gradients. Although th assumption does not in general hold it serves to provide a simplified but plausible model to illustrate the numerical techniques. A restricted discussion of the results is given. (Author) (U)

AD- 746 149 8/3
INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA JASON DIV

Lagrangian Theory of Internal Wave Interaction. (U)

DESCRIPTIVE NOTE: Paper,
DEC 71 15P Rosenbluth,Marshall ;
REPT. NO. P-838
CONTRACT: DAHC15-67-C-0011
MONITOR: IDA/HQ 72-14313

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN WAVES, EQUATIONS OF MOTION), INCOMPRESSIBLE FLOW, PERTURBATION THEORY, PARTIAL DIFFERENTIAL EQUATIONS, NUMERICAL INTEGRATION (U)
IDENTIFIERS: *INTERNAL WAVES, LAGRANGIAN FUNCTIONS (U)

A Lagrangian theory of internal wave interaction is developed. The motion considered is that of a uniformly rotating ocean perturbed about a stationary equilibrium state. The Lagrangian (with incompressibility as a constraint) is expanded in powers of the displacement, and the equation of motion for the wave amplitudes obtained. An order of magnitude estimate is then made for the wave-wave coupling coefficient and energy transfer rate. (Author) (U)

UNCLASSIFIED

AD- 746 138 8/3
MASSACHUSETTS INST OF TECH CAMBRIDGE DEPT OF METEOROLOGY

Nonlinear Interactions among Standing Surface and Internal Gravity Waves. (U)

DESCRIPTIVE NOTE: Doctoral thesis,
JUN 72 102P Joyce,Terrence Michael ;
REPT. NO. 72-3, GFD-72-3
CONTRACT: N00014-67-A-0204-0048, NSF-GA-30616
PROJ: NR-083-157

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with Woods Hole Oceanographic Institution, Mass.

DESCRIPTORS: (*OCEAN WAVES, INTERACTIONS), MATHEMATICAL MODELS, INTERFACES, PARTIAL DIFFERENTIAL EQUATIONS, NUMERICAL INTEGRATION, CURVE FITTING, NONLINEAR SYSTEMS, MECHANICAL WAVES, THESES (U)
IDENTIFIERS: *GRAVITY WAVES, *INTERNAL WAVES, *SURFACE WAVES (U)

A laboratory study was undertaken to measure the momentum transfer from surface to internal gravity waves in a nonlinear, resonant interaction. The interacting waves form triads for which (Sigma sub is)- (Sigma sub 2S) plus or minus (Sigma subI) = 0 and (Kappa sub is)-(Kappa sub 2S) plus or minus (Kappa sub I) = 0; Sigma sub j and Kappa sub j being the frequency and wavenumber of the jth wave. In particular, the experiment is designed to model a generating mechanism for high frequency, oceanic internal waves. Unlike previously published results involving single triplets of interacting waves, all waves here considered are standing waves. The growth to steady state of a resonant internal wave is observed while two deep water surface eigen modes are simultaneously forced by a paddle. Results are compared to theoretical predictions which assume, ab initio, all waves to be standing. Inclusion of viscous side wall dissipation and slight detuning permit predictions of steady state amplitudes and phases as well as initial growth rates. (Author) (U)

AD- 746 088 8/10
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Geophysical Investigation of the Macquarie Ridge Complex, (U)

72 42P Hayes,Dennis E. ;Talwani, Manik ;
REPT. NO. LDGO-1780
CONTRACT: N00014-67-A-0108-0004, NSF-GA-2781
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Antarctic Oceanology II: The Australian-New Zealand Sector, Antarctic Research Series, v19 p211-234 1972.
SUPPLEMENTARY NOTE: Sponsored in part by Grants NSF-GV-23334, NSF-GV-27472.

DESCRIPTORS: (*MARINE GEOLOGY, PACIFIC OCEAN), (*OCEAN BOTTOM TOPOGRAPHY, PACIFIC OCEAN), STRUCTURAL GEOLOGY, ECHO RANGING, DEPTH FINDING, MAGNETIC ANOMALY DETECTION, GEOMAGNETISM, SEDIMENTATION, INTERACTIONS, MOTION, MAPS, INDIAN OCEAN (U)
IDENTIFIERS: *MACQUARIE RIDGE, MAGNETIC ANOMALIES, OCEAN BOTTOM SPREADING, PLATE TECTONICS, SEISMIC PROFILES (U)

A new topographic map of the Macquarie ridge and adjacent areas is presented and shows that the ridge is a highly complicated feature composed of three discrete elements. The ridge is bounded in places by pronounced topographic deeps that lie both to the east and to the west of the ridge. The free air gravity anomalies, total intensity magnetic anomalies, sediment distribution (from seismic profiler records), and seismicity associated with the area are examined in an effort to understand its evolution. The relative motion along this boundary, as predicted by sea floor spreading in the Pacific and Indian oceans, is examined in several models. (Author) (U)

AD- 746 087 8/10 8/7 8/14
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Marine Magnetic Measurements in the Southwest Pacific Ocean and the Identification of New Tectonic Features, (U)

72 15P Christoffel,D. A. ;Falconer, R. K. H. ;
REPT. NO. LDGO-1779
CONTRACT: N00014-67-A-0108-0004
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Antarctic Research Series n19, Antarctic Oceanology II: The Australian-New Zealand Sector p197-209 1972.
SUPPLEMENTARY NOTE: Prepared in cooperation with Victoria Univ., Wellington (New Zealand).

DESCRIPTORS: (*MARINE GEOLOGY, *PACIFIC OCEAN), ANTARCTIC REGIONS, MAGNETIC ANOMALY DETECTION, STRUCTURAL GEOLOGY, GEOMAGNETISM (U)
IDENTIFIERS: *OCEAN BOTTOM SPREADING, BATHYMETRY, *PLATE TECTONICS, SOUTH PACIFIC OCEAN (U)

Analysis of 41 magnetic profiles in the southwest Pacific has enabled the pattern of magnetic anomaly correlations in the area to be clarified and extended. The time scale for sea floor spreading recognizable by characteristic magnetic anomalies has been increased from 76 to 81 m.y. Distinct periods of sea floor spreading can be identified with different poles of rotation for the motion between the Pacific and antarctic plates. South of New Zealand, the Albatross cordillera becomes a fracture zone at least 1200 km long, and the authors propose to name this section the Pacific-Antarctic fracure zone. A revised pole of 82 degrees S, 120 degrees E is suggested for the present Pacific-antarctic pole of rotation. (Author) (U)

AD- 746 086 8/10 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Magnetic Anomalies in the Southeast Indian Ocean, (U)

72 42P Weissel,Jeffrey K. ;Hayes, Dennis E. ;
REPT. NO. LDGO-1778
CONTRACT: N00014-67-A-0108-0004, NSF-GA-27281
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Antarctic Oceanology II: The Australian-New Zealand Sector, Antarctic Research Series, v19 p165-196 1972.
SUPPLEMENTARY NOTE: Sponsored in part by Grants NSF-GV-23334 and NSF-GB-27472.

DESCRIPTORS: (*INDIAN OCEAN, MAGNETIC ANOMALY DETECTION), (*STRUCTURAL GEOLOGY, INDIAN OCEAN), OCEAN BOTTOM TOPOGRAPHY, HYDROGRAPHIC SURVEYING, ECHO RANGING, DEPTH FINDING, SEDIMENTATION, CONTINENTAL SHELVES, MARINE GEOPHYSICS, GEOMAGNETISM, AUSTRALIA (U)
IDENTIFIERS: *MAGNETIC ANOMALIES, OCEAN RIDGES, OCEAN BOTTOM SPREADING, *PLATE TECTONICS (U)

A detailed pattern of magnetic anomaly lineations has been mapped for the area south of Australia and for the south Tasman Sea. This area can be subdivided into four longitudinal zones on the basis of contrasts in magnetic, morphologic, and seismic properties. One zone is characterized by a long period of systematic asymmetric spreading in which material was accreting about 30-40% faster on the north flank of the Southeast Indian ridge than on the south flank. Significant differences in the natural remanent magnetization of the oceanic crust are inferred for the Indian and antarctic plates in this area. The most striking difference is that the amplitudes of certain lineations are greater over the Indian plate than over the antarctic plate. (Author) (U)

AD- 746 085 8/10 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Seismic Profiler Data between Antarctica and Australia. (U)

DESCRIPTIVE NOTE: Journal article,
72 32P Houtz,Robert E. ;Markl, Rudi G. ;
REPT. NO. LDGO-1777
CONTRACT: N00014-67-A-0108-0004, NObsr-64547
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Antarctic Oceanology II: The Australian-New Zealand Sector, Antarctic Research Series, v19 p147-164 1972.
SUPPLEMENTARY NOTE: Sponsored in part by Contract Nonr-266(48), Grants NSF-GA-12825 and NSF-GV-27472.

DESCRIPTORS: (*INDIAN OCEAN, SEDIMENTATION), THICKNESS, OCEAN BOTTOM, ECHO RANGING, CONTINENTAL SHELVES, ANTARCTIC REGIONS, AUSTRALIA (U)
IDENTIFIERS: SEISMIC PROFILES, SEISMIC REFLECTION METHOD (U)

Seismic profiler data from the area between Australia and Antarctica are used to compile a regional sediment isopach map and to discuss sediment distribution. Basement structure is deduced from sonobuoy data where the total sediment cover is too thick to be profiled. The Australian continental rise and South Australian abyssal plain sediments are acoustically similar to those of the antarctic continental rise and the adjacent South Indian plain. The underlying basement morphology is also similar in the two regions. These similarities suggest that similar depositional conditions have prevailed even though Antarctica has been capped by ice, probably since the Upper Miocene. Ice rafting has not contributed a significant volume of sediment to the post-Upper Miocene section. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 746 084 8/10 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Morphology of the Southeast Indian Ocean, (U)

72 23P Hayes,Dennis E. ;Conolly, John R. ;
REPT. NO. LDGO-1776
CONTRACT: N00014-67-A-0108-0004, NSF-GV-23334
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Antarctic Oceanology II: The Australian-New Zealand Sector, Antarctic Research Series, v19 p125-145 1972.
SUPPLEMENTARY NOTE: Sponsored in part by Grants NSF-GV-27472 and NSF-GA-27281. Prepared in cooperation with South Carolina Univ., Columbia. Dept. of Geology. Grant NSF-28803.

DESCRIPTORS: (*OCEAN BOTTOM TOPOGRAPHY, *INDIAN OCEAN), CONTINENTAL SHELVES, STRUCTURAL GEOLOGY, ECHO RANGING, AUSTRALIA, ANTARCTIC REGIONS (U)
IDENTIFIERS: OCEAN RIDGES, *BATHYMETRY, PLATE TECTONICS, GEOMORPHOLOGY (U)

A new bathymetric chart of the southeast Indian Ocean is presented. This portion of the Indian Ocean sea floor comprises the eastern half of the spreading Indian and antarctic plates. The bottom morphology is dominated by an east-west trending mid-ocean ridge that is symmetrically disposed between southern Australia and East Antarctica. The ridge is interrupted by a zone 250 miles wide of very rugged ridge topography herein called the Australian-antarctic discordance. The discordance has no recognizable counterpart elsewhere in the world ocean. It is characterized by north-south oriented topography lineations with relief of 200-800 fm; the lineations define a zone about 200 fm deeper than the adjacent ridge segments. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 746 082 8/10 8/7
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

Introduction: Marine Geophysics of the Southeast Indian Ocean, (U)

72 8P Hayes,Dennis E. ;
REPT. NO. LDGO-1775
CONTRACT: N00014-67-A-0108-0004, NSF-GA-27281
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Antarctic Oceanology II: The Australian-New Zealand Sector, Antarctic Research Series, v19 p119-124 1972.
SUPPLEMENTARY NOTE: Sponsored in part by Grants NSF-GV-23334 and NSF-GV-27472.

DESCRIPTORS: (*MARINE GEOLOGY, *INDIAN OCEAN), OCEAN BOTTOM TOPOGRAPHY, MAGNETIC ANOMALY DETECTION, ECHO RANGING, SEDIMENTATION, AUSTRALIA, ANTARCTIC REGIONS, NEW ZEALAND (U)
IDENTIFIERS: MAGNETIC ANOMALIES, OCEAN RIDGES, OCEAN BOTTOM SPREADING, *PLATE TECTONICS, GEOMORPHOLOGY (U)

Three papers on morphology, magnetic anomalies, and sediment distribution constitute the geophysical reconnaissance studies of the southeast Indian Ocean. The explanation for asymmetric sea floor growth, major differential sedimentation rates, and the early rifting history of Australia, Antarctica, and New Zealand are the main unresolved problems of the area. The Pacific-Indian plate boundary south of New Zealand is examined in four papers, and the conclusions of these investigations are not in complete agreement. A study of the southwest Pacific defines many peculiar features in the tectonic and magnetic lineation pattern that may relate to similar features of the southeast Indian Ocean. (Author) (U)

AD- 746 080 8/3
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY PALISADES N Y

On the Interaction of the Antarctic Circumpolar Current and the Macquarie Ridge. (U)

DESCRIPTIVE NOTE: Journal article,
72 10P Gordon,Arnold L. :
REPT. NO. LDGO-1774
CONTRACT: N00014-67-A-0108-0004
PROJ: NR-083-142

UNCLASSIFIED REPORT
Availability: Pub. in Antarctic Oceanology II: The Australian-New Zealand Sector, Antarctic Research Series, v19 p71-78 1972.

DESCRIPTORS: (*OCEAN CURRENTS, INTERACTIONS), (*ANTARCTIC REGIONS, OCEAN CURRENTS), FLUID FLOW, HEAT TRANSFER, TEMPERATURE, ATMOSPHERIC MOTION, SALINITY (U)
IDENTIFIERS: MACQUARIE RIDGE, OCEAN RIDGES (U)

South of Australia, the axis of the antarctic circumpolar current is near 50 degrees S and is positioned near the mid-ocean ridge. On approaching the north-south trending Macquarie ridge, the current turns toward the south and returns abruptly to the north into the Emerald basin after passing east of the Macquarie ridge near 58 -60 degrees S. The total sotuhward deflection is near 1100 km. The flow around the southern segment of the ridge, which takes the form of a large permanent loop, recombines with the transport through two deep passages in the ridge (at 53.5 degrees S and 56 degrees S) and continues eastward as an intense flow along the southern slope of the Campbell plateau. (Author) (U)

AD- 746 073 8/3
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Australian-Antarctic Tides, (U)

72 18P Irish,James D. ;Snodgrass, Frank E. ;
CONTRACT: N00014-A-69-0200-6008

UNCLASSIFIED REPORT
Availability: Pub. in Antarctic Research Series, v19 p101-161 1972.
SUPPLEMENTARY NOTE: Sponsored in part by National Science Foundation, Washington, D. C.

DESCRIPTORS: (*TIDES, *INDIAN OCEAN), (*OCEAN CURRENTS, INDIAN OCEAN), ANTARCTIC REGIONS, AUSTRALIA, HYDROSTATIC PRESSURE, TEMPERATURE, VELOCITY (U)

To measure the Australian-antarctic tides, three deep-sea instrument capsules were dropped for 1 month between Australia and Antarctic along 132 degrees E. Records of temperature, pressure, and current velocity were obtained. The velocity records were dominated by 3-cm/sec inertial currents, whereas tidal currents were less than 1 cm/sec. The mean flow showed great variability with changes as great as 6 cm/sec (reversing the direction of flow) over a period of 10 days. The capsule pressure records were compared with the antarctic and Australian coastal records. (Author) (U)

AD- 745 922 13/2 8/3
MASSACHUSETTS INST OF TECH CAMBRIDGE RALPH M PARSONS LAB FOR WATER RESOURCES AND HYDRODYNAMICS

Wave Reflection and Transmission at Permeable Breakwaters. (U)

MAR 72 238P Sollitt,Charles K. ;Cross, Ralph H. , III;
REPT. NO. 147, R72-22
CONTRACT: DACW72-68-C-0032
PROJ: MIT-DRS-71135

UNCLASSIFIED REPORT

DESCRIPTORS: (*BREAKWATERS, MATHEMATICAL MODELS), (*OCEAN WAVES, EQUATIONS OF MOTION), WAVE PROPAGATION, REFLECTORS, TIDES, HYDRAULIC MODELS, STRUCTURAL PROPERTIES, CONSTRUCTION MATERIALS, COASTAL REGIONS, COMPUTER PROGRAMS, THESES (U)
IDENTIFIERS: COASTAL ENGINEERING, SURFACE WAVES (U)

Rubble mound breakwaters are designed to protect exposed marine areas from excessive wave activity. Observations of breakwaters inter-acting with surface waves in laboratory models and in full-scale field applications demonstrate that significant wave energy is transmitted through the interstices of structures commonly regarded as impervious. The objective of this investigation is the development of a theoretical analysis to account for this phenomenon. Three breakwater configurations are considered: (1) crib style breakwaters with vertical walls and homogeneous fill, (2) conventional trapezoidal shape breakwaters with layered fill, and (3) pile array breakwaters composed of vertical piles placed in symmetric patterns. The two dimensional problem is studied. Waves are assumed to arrive at normal incidence. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 745 899 13/2 8/3
CALIFORNIA UNIV BERKELEY HYDRAULIC ENGINEERING LAB

Forces Exerted by Waves Breaking Seaward of a Vertical Seawall. (U)

DESCRIPTIVE NOTE: Technical rept.,
JUN 72 36P Delmonte,Richard C. ;
REPT. NO. HEL-9-20
CONTRACT: DACW72-69-C-0001

UNCLASSIFIED REPORT

DESCRIPTORS: (*BREAKWATERS, FORCE(MECHANICS)), (*OCEAN WAVES, BREAKWATERS), REVETMENTS, PRESSURE, CURVE FITTING, STATISTICAL ANALYSIS, GRAPHICS (U)
IDENTIFIERS: BEACH EROSION, *COASTAL ENGINEERING, *SEA WALLS (U)

The purpose of the paper is to examine theories and data related to wave pressures induced on a vertical seawall by the impingement of water waves which have broken seaward of the wall. The report compares the six articles found by the writer, which relate directly to this subject. Each of the independent studies is reviewed briefly in regard to its purpose, test procedure, theory proposed, test results and conclusions. Comparison of data and theory of the studies is then made. (Author) (U)

AD- 745 620 8/10
OREGON STATE UNIV CORVALLIS DEPT OF OCEANOGRAPHY

Heat Flow through the Floor of Cascadia Basin, (U)

MAR 71 17P Bodvarsson,Gunnar ;Mesecar, Rod S. ;Korgen,Ben J. ;
CONTRACT: Nonr-1286(10)

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Geophysical Research, v76 n20 p4758-4774, 10 Jul 71.
SUPPLEMENTARY NOTE: Prepared in cooperation with North Carolina Univ., Chapel Hill. Dept. of Geology. Sponsored in part by Grants NSF-GA-1246 and NSF-GA-1250. Revision of report dated 17 Apr 70.

DESCRIPTORS: (*CONTINENTAL SHELVES, HEAT TRANSFER), (*PACIFIC OCEAN, MARINE GEOPHYSICS), OCEAN BOTTOM, THERMAL CONDUCTIVITY, LITHOSPHERE, MOTION (U)
IDENTIFIERS: *OCEAN BOTTOM SPREADING, CASCADIA BASIN, PLATE TECTONICS, JUAN DE FUCA RIDGE, CONTINENTAL SLOPES (U)

Forty-one measurements of heat flow, including three close-spaced groups of measurements, were taken at positions extending from the continental slope off Oregon to the east flank of the Juan de Fuca ridge. Individual values ranged from 1.08 micro cal/sq cm sec in 445 meters of water on the continental slope off Oregon to 7.21 micro cal/sq cm sec measured in 2740 meters of water near the Juan de Fuca ridge crest. (Author) (U)

AD- 745 617 8/3
OREGON STATE UNIV CORVALLIS DEPT OF OCEANOGRAPHY

The Temporal Structure of Oceanic Motion off the Oregon Coast, Northeastern Pacific, 1969, (U)

JUN 71 15P Sakou,Toshitsugu ;Neshyba, Steve ;
CONTRACT: N00014-68-A-0148
PROJ: NR-083-230

UNCLASSIFIED REPORT
Availability: Pub. in Sears Foundation: Jnl. of Marine Research, v30 n1 p1-14, 15 Jan 72.

DESCRIPTORS: (*OCEAN CURRENTS, CONTINENTAL SHELVES), (*PACIFIC OCEAN, OCEAN CURRENTS), MOORING BUOYS, TURBULENCE, INTERACTIONS, HEAT TRANSFER, OREGON (U)
IDENTIFIERS: AIR WATER INTERACTIONS (U)

Current measurements collected from an array of moored buoy stations off the coast of Oregon from April through November 1969 have been used to study the spatial and temporal structure of oceanic currents over the continental slope in the northeastern part of the Pacific. The typical spectra may be subdivided into low-frequency, intermediate-frequency, and high-frequency ranges. The variation in low-frequency motion (mean flow), the generation and decay of inertial-frequency motion, and the intensity of the high-frequency motion (turbulence) have been found to be related to the local atmospheric motion. (Author) (U)

AD- 745 603 8/3 8/10
OREGON STATE UNIV CORVALLIS DEPT OF OCEANOGRAPHY

Spectra of Internal Waves: 'In-Situ' Measurements in a Multiple-Layered Structure, (U)

OCT 71 5P Neshyba,S. ;Neal,V. T. ; Denner,W. W. ;

UNCLASSIFIED REPORT

Availability: Pub. in Jnl. of Physical Oceanography, v2 n1 p91-95 Jan 72.

SUPPLEMENTARY NOTE: Sponsored in part by the Office of Naval Research through the Naval Arctic Research Lab., Barrow, Alaska, and Grant NSF-GA-27342. Revision of report dated 30 Aug 71.

DESCRIPTORS: (*OCEAN WAVES, ARCTIC OCEAN), (*ARCTIC OCEAN, TEMPERATURE), TIME SERIES ANALYSIS, SPECTRUM ANALYZERS, ICE ISLANDS (U)
IDENTIFIERS: *INTERNAL WAVES, SPECTRUM ANALYSIS (U)

The persistence of layering between 200 and 400 m depth in the Arctic Ocean has enabled construction of accurate internal wave amplitude traces from a 30-hr series of successive temperature profiles taken at 4-min intervals. (Author) (U)

AD- 745 590 8/10
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Temperature and Conductivity Measurements Under Ice Island T-3, (U)

AUG 71 14P Denner,Warren ;Neshyba,Steve ;Neal,Victor T. ;

UNCLASSIFIED REPORT

Availability: Pub. in Jnl. of Geophysical Research, v76 n33 p8107-8120, 20 Nov 71.

SUPPLEMENTARY NOTE: Revision of report dated 8 Jun 71.

DESCRIPTORS: (*ARCTIC OCEAN, OCEANOGRAPHIC DATA), ICE ISLANDS, TEMPERATURE, SALINITY, DENSITY, ELECTRICAL CONDUCTIVITY (U)
IDENTIFIERS: FLETCHER ICE ISLAND (U)

Marked step-like structure exists in vertical profiles of temperature and salinity obtained in the Arctic Ocean. This structure occurs between 200 and 500 meters depth, where both temperature and salinity increase with depth. Nominally, the structure consists of thin sheets (0.1 meter thick) separating adjacent homogeneous layers (3 meters thick) that differ in temperature and in salinity. Although the step structure is quite persistent, its character varies markedly with depth. Intermediate layers have been observed, as well as noncoincident temperature and salinity gradient sheets. Analysis of the data lends support to the hypothesis that this type of layering arises from the double-diffusive process. (Author) (U)

AD- 745 583 8/10 4/2 8/8
OREGON STATE UNIV CORVALLIS DEPT OF OCEANOGRAPHY

Compilation of Reprints, (U)

JUN 72 109P Paulson,C. A. ;Korgen,Ben J. ;Paquin,J. E. ;Neal,Victor T. ;Gordon, Louis I. ;
REPT. NO. TR-229, Ref-72-3
CONTRACT: N00014-67-A-0369-0007, Nonr-1286(10)
PROJ: NR-083-102, NR-083-230

UNCLASSIFIED REPORT
Availability: Pub. in various jnls.
SUPPLEMENTARY NOTE: Also includes Rept. nos. TR-230 through TR-238. Ref-72-4 through Ref-72-12.

DESCRIPTORS: (*OCEANOGRAPHIC DATA, REPORTS), (*MARINE METEOROLOGY, HEAT TRANSFER), (*LAKES, TEMPERATURE), EVAPORATION, OCEAN BOTTOM, HUMIDITY, CARBON DIOXIDE, BOUNDARY LAYER, SURFACE TEMPERATURE, OREGON, ICE ISLANDS, SALINITY, PACIFIC OCEAN, ARCTIC OCEAN (U)
IDENTIFIERS: NORTH PACIFIC OCEAN, *AIR WATER INTERACTIONS, CASCADIA BASIN, INTERNAL WAVES, CRATER LAKE (U)

;Contents: Cooling of a water surface by evaporation, radiation, and heat transfer; Heat flow through the floor of Caxcadia Basin; The determination of the Kolmogoroff constants for velocity, temperature and humidity fluctuations from second- and third-order structure functions; Temperature microstructure in Crater Lake, Oregon; Carbon dioxide partial pressures in North Pacific surface waters - time variations; Measurements of the turbulent fluxes of momentum, moisture and sensible heat over the ocean; Temperature and conductivity measurements under ice island T-3; Thermal stratification in the Arctic Ocean; The temporal structure of oceanic motion off the Oregon coast, Northeastern Pacific, 1969; Spectra of internal waves: in-situ measurements in a multiple-layered structure. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 744 925 8/3
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

The Development of a Homogeneous Numerical Ocean Model for the Arctic Ocean, (U)

JUL 72 51P Galt,J. A. ;
REPT. NO. NPS-58G172071A

UNCLASSIFIED REPORT

DESCRIPTORS: (*OCEAN CURRENTS, ARCTIC OCEAN), (*ARCTIC OCEAN, MATHEMATICAL MODELS), WIND, EQUATIONS OF MOTION, PARTIAL DIFFERENTIAL EQUATIONS, DIFFERENCE EQUATIONS, NUMERICAL INTEGRATION, NUMERICAL ANALYSIS, COMPUTER PROGRAMS (U)
IDENTIFIERS: BATHYMETRY, FINITE DIFFERENCE THEORY, FORTRAN, FORTRAN 4 PROGRAMMING LANGUAGE (U)

A numerical ocean model driven by surface stress and a source-sink distribution is developed for a homogeneous ocean. Non-linearities, lateral friction and bottom friction are included. The basin shape can be varied to accommodate a large variety of configurations. Variable bathymetry and sources/sinks around the perimeter are included. The numerical scheme is conditionally stable and has second order accuracy in space and time. A number of test cases are run to explore the dynamic significances of the various processes represented. The possible influence of these processes on the circulation of the Arctic ocean are discussed. (Author) (U)

AD- 744 907 13/10 8/3
ALASKA UNIV COLLEGE INST OF MARINE SCIENCE

A Sub-Arctic Pooh-Bah Float, (U)

NOV 71 7P Matthews,J. Brian ;Nebert, David L. ;
REPT. NO. IMS Contrib-30
CONTRACT: N00014-67-A-0317-0002

UNCLASSIFIED REPORT
Availability: Pub. in Cahiers Oceanographiques, v30 n9 p1-5 Nov 71.

DESCRIPTORS: (*FLOATS, DESIGN), (*OCEAN CURRENTS, MEASUREMENT), SEA ICE, AUTOMATIC, DEEP WATER, ANCHORS(MARINE), COLD WEATHER TESTS, TOWED BODIES (U)

Carruthers (1968) reported on the use and construction of an automatic Pooh-Bah float. The ingenious device is so constructed as to closely follow the surface water for a period of time up to twelve hours. On the expiration of a predetermined time interval the float automatically anchors, rises from the surface and raises a flag. The original design will not function under subarctic conditions. A new version suitable for icy, deep water is presented. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 744 881 8/3
HENRY KRUMB SCHOOL OF MINES NEW YORK DIV OF OCEAN ENGINEERING

Internal Waves and Turbulence in the Deep Ocean, (U)

OCT 71 8P Pochapsky,T. E. ;
CONTRACT: N00014-67-A-0108-0011
PROJ: NR-083-243

UNCLASSIFIED REPORT
Availability: Pub. in Jnl. of Physical Oceanography, v2 n1 p96-103 Jan 72.
SUPPLEMENTARY NOTE: Revision of report dated 12 Aug 71.

DESCRIPTORS: (*OCEAN WAVES, *ATLANTIC OCEAN), DEEP WATER, TURBULENCE, FREQUENCY, BUOYANCY, POWER SPECTRA, STATISTICAL ANALYSIS, KINETIC ENERGY (U)
IDENTIFIERS: NORTH ATLANTIC OCEAN, *INTERNAL WAVES (U)

Energy densities as a function of frequency of the vertical and relative horizontal velocities of water in the deep ocean as measured at clusters of neutrally buoyant floats are compared for different locations in the North Atlantic Ocean. The comparisons cover a range of frequencies from somewhat above inertial to values higher than the Vaisala frequency. (Author) (U)

AD- 744 771 8/10 9/6 4/2
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Telemetering of Oceanographic Data for the North Pacific Study. (U)

70 7P Devereux,R. F. ;Evans,M. W. ;Isaacs,J. D. ;Kosic,R. F. ; Schwartzlose,R. A. ;
CONTRACT: N00014-69-A-0200-6006

UNCLASSIFIED REPORT
Availability: Pub. in Telemetry Jnl., p19-23 Feb/Mar 70.

DESCRIPTORS: (*OCEANOGRAPHIC DATA, TELEMETERING DATA), (*TELEMETERING DATA, *PACIFIC OCEAN), METEOROLOGICAL PHENOMENA, MOORING BUOYS, NETWORKS, CLIMATE, TIME SERIES ANALYSIS, OCEANOGRAPHIC SHIPS, MARINE METEOROLOGY (U)
IDENTIFIERS: NORTH PACIFIC OCEAN (U)

Oceanographic and meteorologic data from the mid-North Pacific are being telemetered daily to an Ocean Data Center situated on the campus of the University of California's Scripps Institution of Oceanography. These data are being collected from a large buoy, in support of Scripps' North Pacific Study. Data from smaller buoys are stored internally for routine recovery. The primary objectives of this program are to study the relationship between Pacific Ocean conditions and climatic conditions over North America. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 744 766 8/10 4/2
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

The Operational Results from the North Pacific Study. (U)

70 10P Isaacs,John D. ; Schwartzlose,Richard A. ;
CONTRACT: N00014-69-A-0200-6006

UNCLASSIFIED REPORT
Availability: Pub. in Annual Preprints (6th), Marine Technology Society, Washington, D.C., 29 Jun-1 Jul 70, v1 p1-9 1970.

DESCRIPTORS: (*OCEANOGRAPHIC DATA, *PACIFIC OCEAN), (*WEATHER FORECASTING, MARINE METEOROLOGY), SURFACE TEMPERATURE, INTERACTIONS, METEOROLOGICAL INSTRUMENTS, MOORING BUOYS, DETECTORS, RELIABILITY (U)
IDENTIFIERS: NORTH PACIFIC OCEAN, AIR WATER INTERACTIONS (U)

The North Pacific Study is concerned with the nature of the large-scale changes in sea-surface conditions that develop in the upper layers of the ocean and the interrelationships of these changes with meteorological events. This study may improve weather and ocean forecasting for the benefit of fisheries and long-range weather forecasting. Deep-moored instrument stations are used to determine the nature of the meteorological and sub-surface changes associated with the anomalous surface features. These buoys have been anchored and have collected data in the North Pacific since August, 1968. (Author) (U)

AD- 744 571 8/10
RHODE ISLAND UNIV KINGSTON GRADUATE SCHOOL OF OCEANOGRAPHY

Fluoride Chlorinity Ratio of Sea Water Between the Grand Banks and the Mid-Atlantic Ridge. (U)

JUN 71 8P Kester,Dana R. ;
REPT. NO. Ref-72-10
CONTRACT: N00014-68-A-0215-0003

UNCLASSIFIED REPORT
Availability: Pub. in Deep-Sea Research, v18 p1123-1126 1971.
SUPPLEMENTARY NOTE: Revision of report dated 18 Jan 71.

DESCRIPTORS: (*SEA WATER, FLUORIDES), (*ATLANTIC OCEAN, CHLORIDES), SAMPLING, DEPTH FINDING, CONCENTRATION(CHEMISTRY), DEEP WATER, TRACER STUDIES, OCEAN CURRENTS (U)
IDENTIFIERS: MIDATLANTIC RIDGE, OCEAN RIDGES, GRAND BANKS (U)

Fluoride/chlorinity ratios were determined in sea water samples collected at various depths along a transect from the Grand Banks to the eastern side of the Mid-Atlantic Ridge. There was no evidence of high fluoride near the Ridge. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0M07

AD- 744 538 8/7
SCRIPPS INSTITUTION OF OCEANOGRAPHY SAN DIEGO CALIF MARINE PHYSICAL LAB

Mantle Anisotropy in the Pacific Ocean. (U)

DESCRIPTIVE NOTE: Summary rept.,
JUL 71 16P Raitt,R. W. ;Shor,G. G. , Jr.;Morris,G. B. ;Kirk,H. K. ;
REPT. NO. MPL-U-28/70
CONTRACT: N00014-69-A-0200-6002, NSF-GA-19703
PROJ: NR-260-103

UNCLASSIFIED REPORT
Availability: Pub. in Tectonophysics, v12 p173-186 1971.

DESCRIPTORS: (*STRUCTURAL GEOLOGY, *PACIFIC OCEAN), SEISMIC WAVES, STATISTICAL ANALYSIS, ECHO RANGING, OCEAN BOTTOM, ANISOTROPY, ROCK, COMPRESSIVE PROPERTIES, HAWAII, CALIFORNIA (U)
IDENTIFIERS: SEISMIC REFLECTION METHOD, HAWAIIAN ARCH, *EARTH MANTLE, EAST PACIFIC RISE (U)

Following Hess' (1964) suggestion of the existence of anisotropy of compressional wave velocity in the mantle, measurements of anisotropy have been made in a number of locations in the North and South Pacific. First results showed that, north of Hawaii, the east-west velocity was 8% higher than the north-south velocity, and west of California the east-west velocity was 4% higher. A geographical variability in velocity of the same order of magnitude as the anisotropic variation requires that measurements all be taken at the same location, and makes statistical studies of existing scattered data of marginal value. Later work in the eastern equatorial Pacific, using a single ship method, indicate a small anisotropic term with maximum velocity southeast-northwest, perpendicular to the East Pacific Rise axis in the study area. Additional measurements were made in the northern part of the North Pacific in 1970. (Author) (U)

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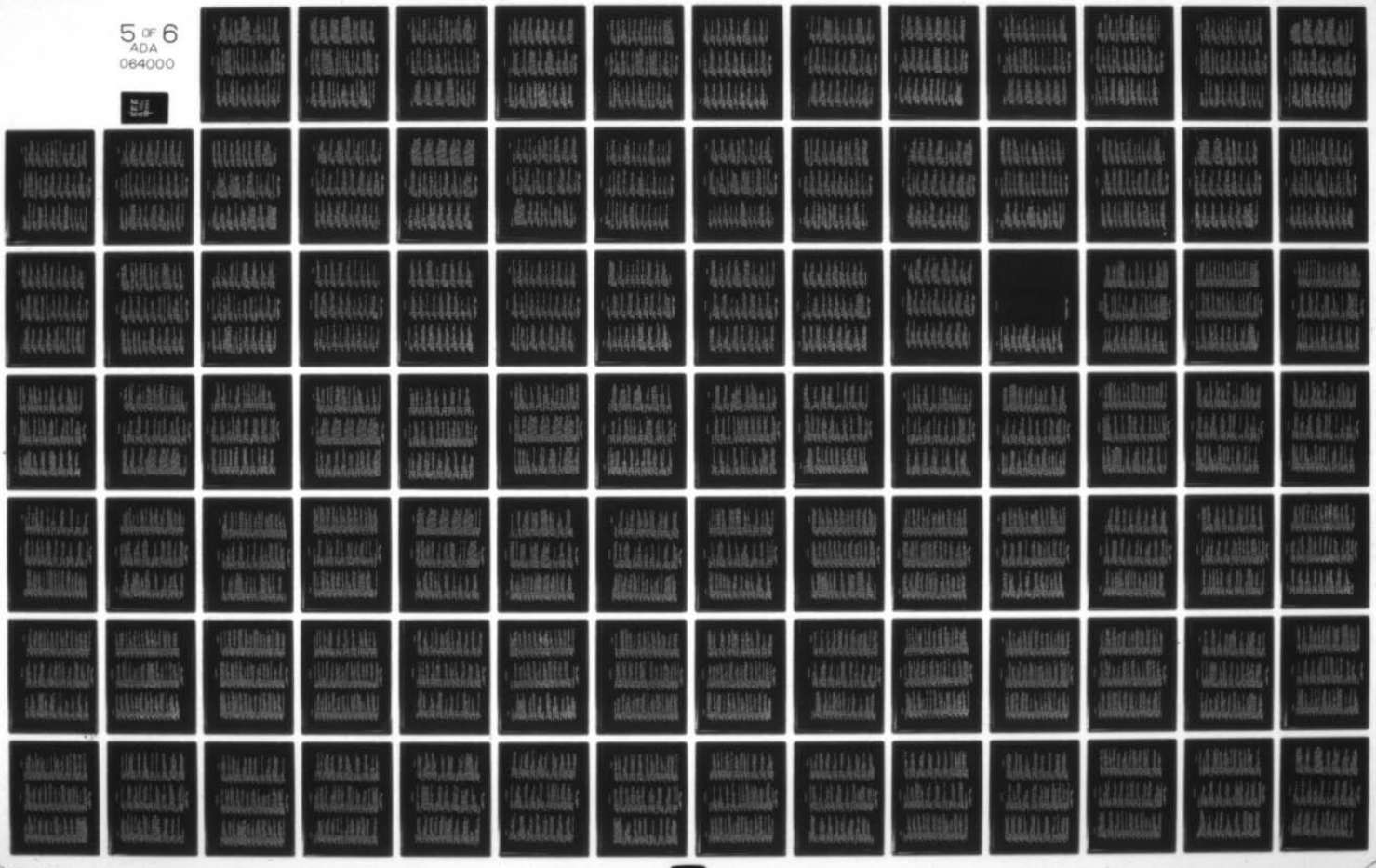
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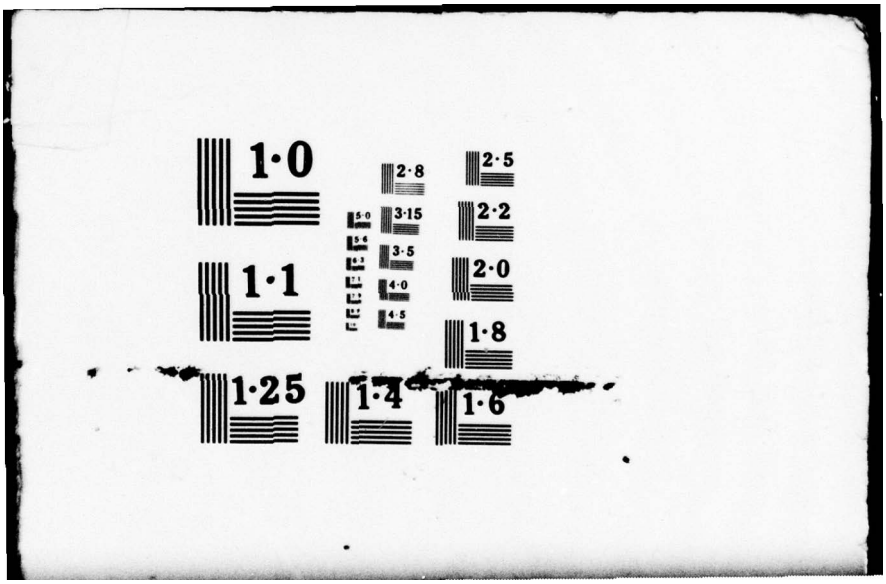
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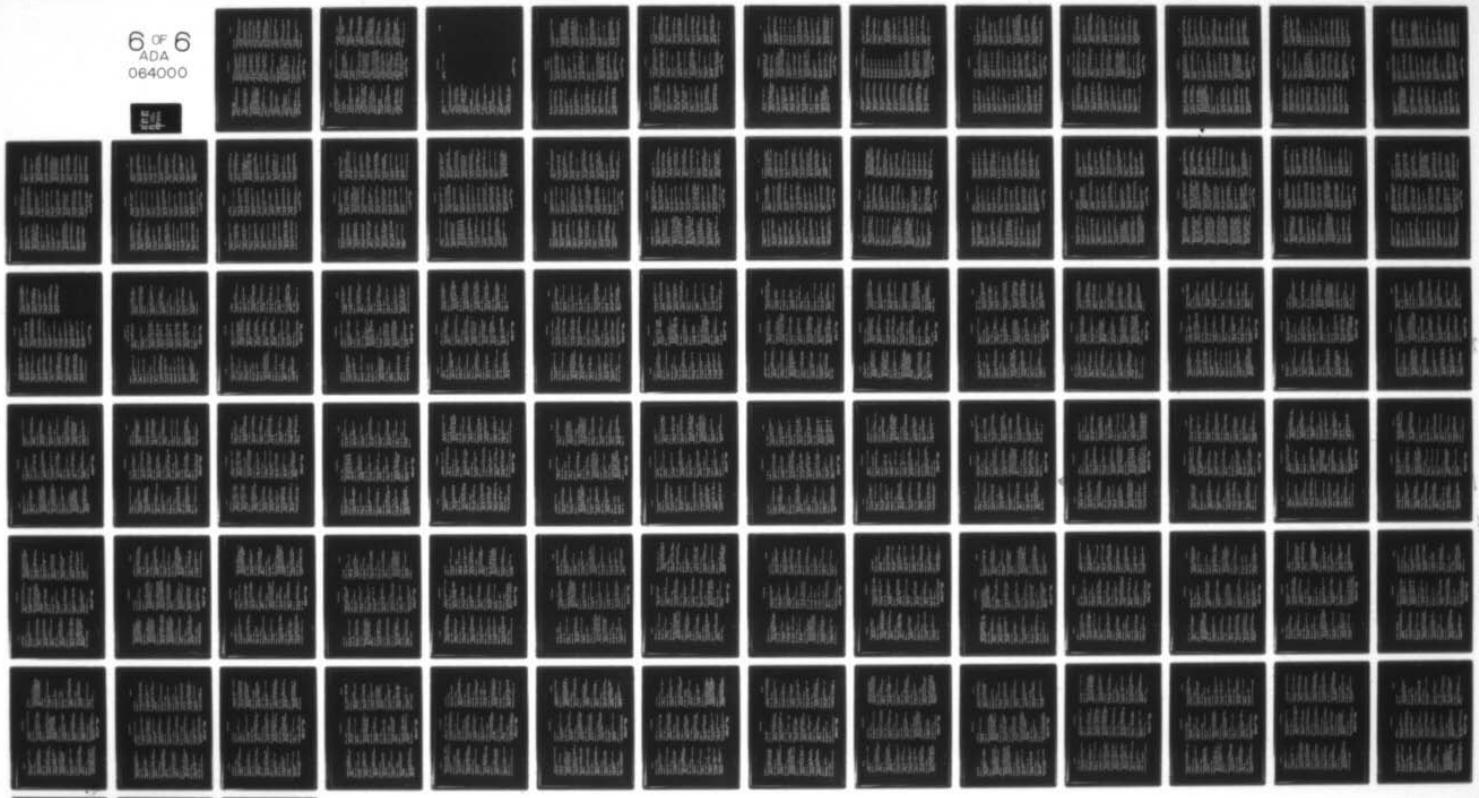
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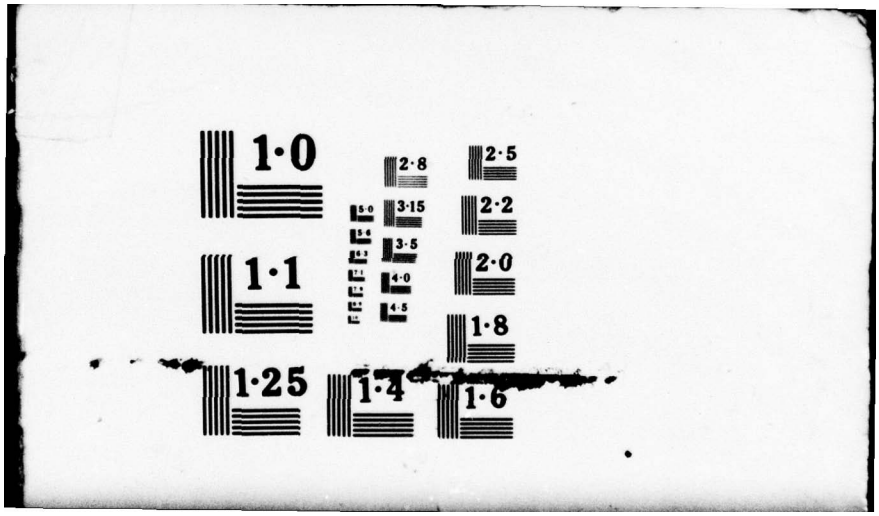
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